

HARRIS CORPORATION
EXPERIMENTAL SPECIAL TEMPORARY
AUTHORITY APPLICATION
2.4 GHz EXPERIMENT
SAN CLEMENTE ISLAND, CA
JULY 2004

DESCRIPTION OF EXPERIMENT

Response to Question 4.

Harris Corporation (Harris) is requesting Special Temporary Authority (STA) to permit operation of the equipment specified in section 8 of this application. The experiment by Harris will be part of a project being administered by the United States Navy at its military base on San Clemente, Island, California. At the conclusion of the experimental tests contemplated herein, the equipment is intended to be used by the United States Navy at its base on the San Clemente Island Range Complex (SCIRC).

Harris wishes to highlight the need for utilizing non-governmental spectrum for testing equipment that will ultimately be operated on Federal Government spectrum by the United States Navy, assuming that the technology for doing so becomes available. The experimental STA being requested by Harris is necessary for testing purposes in connection with contracts with the United States Navy. The tests will be conducted on behalf of the Navy's SCIRC to determine the extended capabilities of 802.11 wireless LAN devices.

While the individual components of the Harris equipment are not in themselves experimental, the combination of an 802.11 device with the proposed antennas would be an experimental use of the equipment. The experiment will involve four separate antennas — two fixed/base antennas, located on San Clemente Island, and two mobile antennas, one located on a U.S. vessel in bodies of water surrounding San Clemente Island, and the other located on a U.S. airplane flying near San Clemente Island. Harris, in conjunction with the Navy, will undertake efforts to ensure that potential interference to 2.4 GHz operations on the mainland of California are minimized. Harris recognizes that any experimental authority will be conditioned on a non-interference causing basis.

Harris submits that a grant of an experimental STA 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 technology being tested does not consist of commercial off-the-shelf (COTS) devices. The demonstration will include transmission of classified data that requires NSA Type 1 encryption. This level of protection is only available in the SecNet-11 card, which utilizes the 802.11-b technology/waveform operating in the 2.4 GHz band. To date, there are no COTS frequency converters that will handle this scenario. Encrypted frequency conversion is one of the areas included within the Harris study, and the study is in the very earliest stages of pre-development. The final system, once it has been fully developed, will be designed to operate in the 1.8 GHz frequency range, which is reserved for Federal Government use. However, the manufacture and operation of encrypted frequency conversion devices for use in the 1.8 GHz band is not available currently, and probably will not be available until several more years of testing and development are completed.

The bottom line consideration is not a propagation issue, but an encryption issue. At the present time, the 2.4 GHz band is the only band that affords protected transmission of classified data.

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