



May 8, 2002

Federal Communications Commission
Office of Engineering & Technology
445 12th Street, SW
Washington, DC 20554

Subject: Universal License – Attachment 1 – Response to Items 4 & 6

Item 4:

Lakota Technical Solutions, Inc. has been awarded a subcontract to continue development on a Department of the Navy prototype system for the transmission of military data via a wireless Local Area Network (LAN). This effort is being performed under US Navy contract N00014-01-D-0225, which is being administered by the Office of Naval Research (ONR) Arlington, VA.

The ultimate goal of this system is provide a seamless data communications backbone between military forces at sea, in the air, and on the ground. At the onset of this program, we will be demonstrating certain capabilities via hardwired landlines (i.e., modems and Ethernet). However, as the development process moves forward, we will need to begin addressing transmission of data via the Radio Frequency (RF) spectrum. Thus, we are seeking this experimental license in order to continue addressing the multitude of issues that must be understood in order to perform a successful demonstration of our prototype.

At the present time, Lakota Technical Solutions, Inc., does possess a RF capability in terms of a Special Temporary Authority (STA) experimental license (File Number 0397-EX-ST-2001) to transmit and the actual radio equipment to be used in the development of the prototype. This STA Experimental Service was issued in support of the Department of the Navy Contract N000178-99-C-3060, which was administered by the Naval Surface Warfare Center in Dahlgren, VA.

The N00014-01-D-0225 contract will continue the prototype development begun with the N000178-99-C-3060 contract. To continue our development activities, it is necessary to continue using modified Amateur Radio equipment. This decision has been made for several reasons: 1) a short purchasing lead time for obtaining the equipment; 2) relatively low price for purchasing quality equipment; and 3) a large volume of information exists for establishing a digital packet communication network via Amateur Radio (e.g., books, technical magazine articles, software, established operating techniques, and established digital networks). Lakota Technical Solutions, Inc., will perform no testing within the Amateur Radio Frequency bands. However, we do seek to “port” some of this technology to our application, in so far as it is legal to do so.

Item 6:

The Universal Experimental License is needed for continued development and testing of the RF communication portion of a prototype wireless LAN. This prototype is being developed in order to perform a technology demonstration for the US Navy. Ultimately, the technology will need to be demonstrated within the military frequency band. However, obtaining approval for that will take at least 6 to 8 months. In the interim, the Universal Experimental License and appropriate radio equipment can be utilized to continue development work on this project.

The ultimate goal of this activity is the transmission of data on military frequencies via military radios. However, due to the length of time required to obtain the military radios and to obtain the appropriate approval for transmission in these frequencies, it will be necessary to continue development activities without using military radios, or frequencies. During the new development period, which will be approximately 2-years, it will be

required to operate two radios in either the VHF or UHF frequency bands in order to develop the software for transmission of digital data over an RF network.

The plan is to continue using modified amateur radio transceivers and terminal node controllers (TNC's) that are interfaced to computers. At some point during the development, the modified amateur radio transceivers may be replaced with commercial transceivers. However, these commercial radios will operate at the same frequencies and with an equivalent bandwidth, transmission mode, and output power as the modified amateur radios.

Approximately 90% of the communication will involve transmission of digital data. However, some voice transmission may be required via these same radios and frequencies in order to control the test events.

Development efforts will begin as soon as the Universal Experimental License is obtained and will continue for a period of 2 years. Most development and testing will occur Monday – Friday from 8:00 am to 11:00 pm, with the occasional Saturday and/or Sunday from 8:00 am to 11:00 pm, as system testing may require.

The transmission and receiver locations will initially be located at the physical address for Lakota Technical Solutions, Inc. Therefore, the initial transmission distance will be very short. All initial development work will be conducted within the confines of our Station Location. Once a working system has been established, additional testing may need to be performed outside of the physical confines of our offices. This testing would likely occur over relatively short distances (e.g., up to 3 miles). To perform this testing, we will use whatever call sign we are assigned.

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