

Exhibit 1 for Form 442 Submission
Description of Government Projects

Farr Research is a company that conducts research on Ultra-Wideband Antennas for the US government on a number of contracts. We have several ongoing projects that require fabrication and testing of new antenna designs.

We propose using very low levels of UWB to characterize our experimental designs in very remote areas. The emission levels are well below those levels that have already been approved for other applications in the February 14, 2001 Report and Order on UWB Emissions, FCC 02-48. Our current contracts run for another two years and are summarized below. Because we are an ongoing concern, we wish to apply for a five-year period, to satisfy the requirements of upcoming contracts.

Title: Ultra-Compact Impulse Radiating Antenna for Space Applications
Contract Number: F29601-02-C-0012
Funding Office: Air Force Research Laboratory
Duration of Effort: February 2002 – May 2004

Compact Ultra-Wideband (UWB) antennas with broad bandwidth could be of great use in a variety of space-based applications, including radar, communications, and surveillance. The challenge is to deploy a lightweight UWB antenna that is stowable in a small volume, that is automatically deployable, and that will be resistant to the harsh space environment. To overcome these challenges we are developing an Ultra-Compact Impulse Radiating Antenna (IRA) that is lightweight and is automatically deployed into the shape of an umbrella. Thus, we are extending our earlier work on the Collapsible Impulse Radiating Antenna (CIRA), by making it smaller and more lightweight. We are implementing this by using lighter materials, and by using folded ribs. We will also incorporate an automatic deployment mechanism based on springs.

Title: A Lightweight Ultra-Wideband Lens TEM Horn with Low Sidelobes
Contract Number: F29601-03-C-0045
Funding Office: Air Force Research Laboratory
Duration of Effort: March 2003 – March 2005

Ultra-Wideband radar systems could contribute significantly to the detection and identification of unknown objects. UWB radars have been shown to work well in environments where conventional radars fail, such as looking through foliage or soil. However, UWB radars suffer from the lack of an antenna with low sidelobes, while still maintaining the ability to radiate a clean impulse. Currently available UWB antennas, such as the reflector Impulse Radiating Antenna, have a problem with sidelobes that are difficult to treat. In addition, antennas fabricated from lenses are often too heavy to be practical. To address this problem we propose to develop Lens TEM horns. These devices have more uniform aperture fields than more traditional reflector IRAs, so they are expected to have lower sidelobes. In order to keep the weight of the antenna to a minimum, artificial dielectric (AD) materials will be used to fabricate the lens.