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HEADLINE: Bodkin Design Awarded Contract to Develop Compact Hyperspectral Imager for U.S. Navy

DATE: March 2006

NEWTON, MASSACHUSETTS

Bodkin Design & Engineering, LLC has been awarded a \$70,000 contract from the U.S. Navy to develop a compact hyperspectral digital imaging camera for deployment on unmanned aerial vehicles (UAVs). Real-time data collection is achieved with a standard USB 2.0 data transfer protocol. This system is the first to combine BD&E's unique expertise in snap-shot hyperspectral imaging with its growing line of UAV reconnaissance systems. The 6-month-long demonstration project is funded under the Small Business Innovation Research (SBIR) program.

A prototype system will be demonstrated as part of the Navy's ongoing efforts to improve target acquisition and threat assessment to protect both civilian and military assets. The Navy is interested in hyperspectral imaging (imaging spectroscopy) because it enables more accurate detection of materials and objects than does conventional imaging. While a conventional color image has three colors per picture (red, green, and blue), a hyperspectral image can have hundreds of colors. Hyperspectral imaging combines the spatial image with spectral analysis to build up a three-dimensional data cube (two dimensions of the data cube are spatial and the third dimension is wavelength).

There are several methods currently available for acquiring hyperspectral images, but they are limited in their ability to satisfy the military's need for speed, accuracy, and ease of use. The innovative device being built by Bodkin Design & Engineering, LLC will capture spectral and spatial information in one instantaneous video frame. It has no moving parts and provides high-resolution spectra in a compact, ruggedized, low-cost package. This technology will improve standoff target detection, materials identification, and the quantification of atmospheric constituents and effluents.

Key applications include missile defense, chemical defense, autonomous material identification, and homeland security. Hyperspectral imagery also finds application in geologic mapping, biological research, medical imaging, cancer screening, and in clinical instrumentation. BD&E's highly sensitive design can provide the instrumentation for these applications in a simple, low-cost, robust package.

About Bodkin Design & Engineering

Bodkin Design and Engineering, LLC has been providing concept development, and design and build services since 1992. Headquartered in Newton, Massachusetts, the company serves the international OEM, commercial, military, and research communities. Specializing in visible and infrared cameras and imaging spectroscopy, BD&E has overseen the successful introduction of products ranging from miniature infrared cameras and dental imagers to spectroscopic instruments for drug discovery. To learn more, visit the website at www.bodkindesign.com.