Innovative Technology

**Topic Number** | SOCOM01-007
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**Topic Title** | Tactical Body Worn RF Antenna Vest

Current technology often requires warfighters to stop moving and set-up equipment when performing radio frequency (RF) detection. A tactical, body-worn RF receiving antenna could provide On-The-Move (OTM) RF detection. MegaWave has developed a wideband body worn antenna for threat warning and direction finding (DF) applications. The company has successfully performed DF calibration over a broad frequency range. The system combines a body worn computer, a DRS9144 dual channel nanoceptor, and a software control and display suite and wireless wrist mounted display developed under other Small Business Innovation Research (SBIR) projects, and integrates the antenna into the SOF Personnel Equipment Advanced Requirements (SPEAR) vest.

Military and Commercial Significance

MegaWave received SBIR awards totaling over $1 million from the Department of Defense (DoD) for the development of its antenna technology. A Phase III SBIR contract in the amount of $998,000 was concurrently awarded with the original Phase II SBIR contract to complete the development and demonstration of the Tactical Body Worn RF Antenna vest.

MegaWave developed a derivative of the Body Worn Antenna for the Operational Test - Tactical Engagement System Communications Upgrade and other variants for direction finding applications for a Program Executive Office (PEO) Simulation, Training and Instrumentation (STRI) program. Total sales for these items were roughly $500,000.

In addition, MegaWave received a follow-on Phase II award from the Navy’s Space and Naval Warfare Systems Command (SPAWAR) on SOCOM01-007. This award was worth over $700,000 and focused on developing Soldier antennas to support the Navy’s Mobile User Objective System (MUOS). Two quick-deploy At-the-Pause antennas and a rucksack-based OTM antenna were developed and demonstrated. A Phase II.5 SBIR contract for $292,000 was also awarded against this topic to develop an improved Soldier OTM antenna integrated into the radio carrier. Voice communication with this antenna was demonstrated with the MUOS system.

The technology has application throughout the Department of Defense and in law enforcement.