DEPARTMENT OF THE NAVY
SBIR/STTR TRANSITION PROGRAM

SUCCESS STORY

TOPIC NUMBER:
AF083-053, N141-065, N151-059

SBIR INVESTMENT:
$5,188,044

PHASE III FUNDING:
$66,969,445

LARGE TIME BAND WIDTH PRODUCT SIGNAL ACQUISITION PROCESSORS

Azure Summit Technology, Inc.'s digital signal processing hardware detects and processes a vast array of signals, strengthening the capabilities of Sailors and Marines operating aircraft, unmanned aircraft systems and submarines.

Azure Summit Technology, Inc.

POC: Will Pearson
571-308-1400
Fairfax, Virginia 22030

https://www.azuresummit.com/

THE CHALLENGE

The demand for advanced airborne electronic attack and ground electronic warfare (EW) systems is increasing at a rapid pace. These innovative technologies provide both offensive and defensive capabilities, strengthening the strategic capabilities of Sailors and Marines. A key technology in EW systems is digital signal processing (DSP). The Navy sought a dynamically reconfigurable, minimal latency and DSP hardware base to simultaneously handle hundreds of diverse, possibly overlapping signals for multi-functional situational awareness.

THE TECHNOLOGY

Azure Summit Technology, Inc. developed this project under SBIR topics N141-065 "Large Time Band Width Product Signal Acquisition Processors" and AF083-053, "Small UAV Accurate Geolocation and Discrimination." Azure leveraged their transceiver family technology, upgrading the existing system with a wider bandwidth processing capability. This technology is used to produce and integrate the AN/ZLQ-1 V2 Common Chassis Derivative Systems digital signal processor, digital tuner modules, and switches. The AN/ZLQ-1 uses specific emitter detection to track and detect emitters of interest and is used on aircraft, persistent maritime unmanned aircraft systems, and submarines.

THE TRANSITION

In 2022, the Navy awarded a Phase III contract to Azure, which was acquired by CACI International Inc in 2024. This firm-fixed-price and cost-plus fixed-fee, indefinite delivery indefinite quantity contract (N00164-22-D-JW52) is for production, test and evaluation, repairs, engineering services and integration of Common Chassis AN/ZLQ-1 V2 Shop Replaceable Assemblies. The work under this contract includes derivative systems, digital signal processors, digital tuning modules and switches, as well as maintenance, product improvement, training and testing.

THE NAVAL BENEFIT

The wide frequency coverage of Azure's system enables it to detect and process a vast array of signals, including radar emissions, communications and electronic signatures. Real-time data processing capabilities aid in identifying threats and vulnerabilities, contributing to enhanced intelligence gathering and decision-making. The system's open architecture allows the integration of products from other vendors, including radio frequency (RF) front ends with digitizers, general-purpose processors, graphical processing units, and multicore parallel processors.

THE FUTURE

Azure has developed multiple end-to-end system solutions for a variety of customers across the DoD including turnkey direction-finding systems, collision-avoidance radar for UAVs, UAV communications links, and electronic countermeasures, all hosted within a flexible multifunction RF hardware suite. Azure's products are currently deployed on numerous Navy airborne and maritime critical platforms.

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