

Department of the Navy SBIR/STTR Transition Program

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NAVWAR

Topic # NOAA161-844D

RF IM Filter

Adaptive Dynamics, Inc

WHO

SYSCOM: NAVWAR

Sponsoring Program: PEO-T

Transition Target: NAVAIR aircraft

TPOC:

Other transition opportunities: The technology developed for this project has wide applicability to all surface, subsurface, land based, and satellite tactical communications systems that must provide assured communications in degraded tactical interference environments



<https://media.defense.gov/2017/Jan/05/2001684337/-1/-1/0/161017-N-ZZ999-009.JPG>

WHAT

Operational Need and Improvement: Adaptive Dynamics, Inc (ADI) has developed a highly effective interference mitigation filtering capability for a variety of DoD systems. In this contract, ADI is modifying previous versions of our filter to operate successfully in specified tactical aircraft. The development is occurring in two stages. ADI will first develop, integrate and test a single channel version of the filter for the specified system and then expand the capability of that filter to handle multiple channels simultaneously. A multi-channel filter is required for operational use.

Specifications Required: Our solutions must meet specific system requirements for available digital signal processing resources and operate within the thermal specifications for that system

Technology Developed: ADI has developed resource efficient interference mitigation techniques that can surgically remove multiple dynamic interfering signals within the communications bandwidth with minimal to no distortion of the communications signals of interest. These techniques have been developed up to a TRL level 8 for a variety of system applications for the Navy and the Army for satellite, airborne, surface and ground based communications networks. In this project, these capabilities are being extended to provide improved performance for specific airborne systems.

Warfighter Value: The system improvements that ADI will provide under this contract will assure that communication links remain open, even under focused tactical interference attacks. This will increase standoff ranges for individual aircraft and for the integrated task force it will assure that important nodes in the network are not lost from the integrated operations.

WHEN

Contract Number: N68335-19-C-0258 **Ending on:** February 1, 2022

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Develop, Test and Integrate Single Channel Filter	Med	highly successful test results for prototype filter	7	June 2020
Develop Multi-Channel Filter	Med	highly successful test results for prototype Multi-Channel Filter	7	February 2021
Integrate and Test Multi-Channel Filter with Prime Contractor	High	Successful integration and test	8	January 2022

HOW

Projected Business Model: ADI will develop firmware for integration into specific Field Programmable Gate Arrays (FPGAs) that are implemented in the specific systems of interest. ADI will then sell licenses for the firmware that is developed on this contract.

Company Objectives: Expand the set of tactical applications for our innovative reference-free anti-jamming technology and become a leading supplier of interference mitigation systems to the DoD.

Potential Commercial Applications: Interference is a pervasive problem in both commercial and military communications systems. The technology that ADI is developing for military applications can be adapted to a number of commercial systems to minimize the interference that degrades performance in congested environments.

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