

Topic: N151-021

Sonalysts, Inc.

Advanced Modeling and Visualization of Effects for Future Electronic Warfare Systems

One of the biggest strategic warfare challenges today is a loss of access, as a result of the Anti-Access/Areal Denial (A2/AD) threat posed by our increasingly sophisticated adversaries. Advanced Electronic Warfare (EW) capabilities are a critical element of the A2/AD solution being used in ever evolving combinations to disrupt and exploit adversarial use of the electromagnetic spectrum while protecting friendly freedom of action. Sonalysts is developing a game-based technology to model and visualize complex EW capabilities allowing Naval EW mission planners to effectively develop, analyze, and prioritize potential courses of action during the mission planning process. Development of this innovative visualization capability leverages our comprehensive and complementary range of expertise in tactical game-based visualization, software engineering, human systems integration, Navy training, and mission evaluation.

### Technology Category Alignment:

Advanced Electronics

Air Platforms

Electronic Warfare (EW)

Sensors

Weapons Technologies

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**SYSCOM:** NAVAIR

**Contract:** N68335-16-C-0168

 Corporate Brochure: [https://navystp.com/vtm/open\\_file?type=brochure&id=N68335-16-C-0168](https://navystp.com/vtm/open_file?type=brochure&id=N68335-16-C-0168)

# Department of the Navy SBIR/STTR Transition Program

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NAVAIR 2017-840

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## WHO

**SYSCOM:** NAVAIR

**Sponsoring Program:** PMA-234  
(Airborne Electronic Attack Systems  
and EA-6B Program Office)

**Transition Target:** PMA-242,  
HARM, AARGM, PMA-281, PMA-  
299

**TPOC:**  
(301)342-0043

### Other transition opportunities:

Derivatives of this simulation tool could be used by spectrum-regulating agencies, such as the Federal Communications Commission (FCC), to more effectively model interference possibilities among a great variety of competing radio frequency (RF) users. Additional commercial industry value can be found through RF System Design Modeling, or even the testing of potential Intelligence, Surveillance and Reconnaissance Platforms.

**Notes:** PMA-234 will retain the title "Airborne Electronic Attack Systems and EA-6B Program Office" thru FY19.



MOJO - Mission Offensive Jammer Operations

## WHAT

### Operational Need and Improvement:

A primary purpose for MOJO is to visualize Radar Cross Section (RCS) interactions for Blue Force air platforms in reference to Red Force Integrated Air Defense Systems (IADS), optimized for EA-18G aircraft equipped with ALQ-249/Next Generation Jammer (NGJ) for Airborne Electronic Attack (AEA) operations.

### Specifications Required:

Develop the capability to model and simulate the complex tactical electronic warfare (EW) environment, including EW effects, threat radars, tactical aircraft, and other tactically-relevant information in support of Airborne Electronic Attack (AEA) mission planning for current and future EW systems, such as the ALQ-249/Next Generation Jammer (NGJ).

### Technology Developed:

Advanced simulation and modeling of complex systems, electromagnetic environments and interactions from space to the ocean floor. Our system provides a 2D/3D model of the entire earth to include unique geographic weather patterns and other atmospheric conditions.

### Warfighter Value:

Our tool provides low risk training environment for both personnel and systems, directly resulting in the extended performance of personnel, systems, net savings in fuel, maintenance and personnel logistics associated with TDY training.

## WHEN

**Contract Number:** N68335-16-C-0168 **Ending on:** October 1, 2017

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Successful Delivery Spiral 4 Software	Low	Software is stable, final report delivered	5	October 2017
Successful Spiral 5 Delivery	Low	No major bugs discovered, system ready for classified work	5/6	January 2017
MOJO Secure Network Set Up Complete	Low	Defense Security Services approves Sonalyst Secure Network, platform specific work begins	6	February 2018
Information Assurance Plan Approved	Med	Seeking NAVAIR Approval of IA Plan, MOJO Software becomes program of record and is authorized on Department of Defense Information Networks	7	February 2019

## HOW

### Projected Business Model:

The current plan is to license the capabilities of Sonalysts Simulation Engine II, building mission specific products for DoD, or Commercial Customers.

### Company Objectives:

Our goal is to provide a premier simulation and modeling experience that enhances the professional development and training of organizational members by reducing training costs and excess wear and tear on systems.

### Potential Commercial Applications:

Our software tool is organizationally agnostic with direct applicability for Army, Navy, Air Force, Marine Corps, Coast Guard, DHS, National Guard, local law enforcement. The only limit to this system is the imagination of the client/user.

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