

WHO

SYSCOM: NAVSEA

Sponsoring Program: PEO IWS 1.0

Transition Target: AEGIS Combat System

Other Transition Opportunities: Improved immersive collaboration over the digital battlespace or digital twin supports several Defense applications such as Airspace Management & Deconfliction; Integrated Air and Missile Defense (IAMD) Planning & Execution; Live, Virtual, and Constructive Exercises; Command and Control of Multi-Domain Collaborative Sensors; Cross Mission Ground and Communications Enterprise; Space Domain Awareness; Joint Interagency Task Force Exercises; Logistics & Management; Engineering & Design; Systems Health & Monitoring; Conditioned Based Maintenance; Energy Maintenance Systems.

Notes: Modernize Command & Control
Enhance All-Domain Awareness
Deconfliction of Air/Space
Cross Domain Management of Manned and Unmanned Assets
Manage Networked-Collaborative Wide-area Sensing Grids



Image courtesy of FoVI3D. 2022

WHAT

Operational Need and Improvement: The accelerated pace of today's battlespace requires military leaders to build strategies and make decisions in a much shorter timeframe. Developing an optimized capability to engage with 3D information in a high-stress environment will allow the warfighter to increase task accuracy, reduce response time, and increase overall situational awareness.

Specifications Required: The Navy requires an optimized capability for multiple operators to simultaneously engage with complex 3D information to improve situational awareness and enable rapid decision making.

Technology Developed: FoVI3D's PRISM 3-person collaborative workstation is ergonomically designed to allow direct eye access enabling effective communication; provides a configurable 2D touch panel for ease in access to information; and contains a software framework that enables operators to move from an immersive common operational picture mode for all 3 users to an independent view for task specific duties. The Naval Postgraduate School has conducted initial Human Factors testing to validate that the prototype system promotes collaboration, provides an intuitive user interface/experience, and provides effective 3D rendering to reduce cognitive strain and enhance situational awareness.

Warfighter Value: Naturally and intuitively interact with 3D data
Visualize intersecting 3D volumes intuitively
Enable collaboration for effective communication/decisions
Improve situational understanding of the 3-dimensional airspace
Reduce the cognitive strain associated with visualizing the multi-domain environment
With the goal of increasing task accuracy and reducing response time

WHEN

Contract Number: N68335-21-C-0263

Ending on: Feb 27, 2024

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Test Bed Design Review	Low	Acceptance by NPS	3	3rd QTR FY21
Engineering Prototype Installed at NPS	Low	Acceptance by NPS	4	1st QTR FY23
Test Plan Delivered to NPS	Low	IRB Approval	5	3rd QTR FY23
Technical Seminal Transition Event	Low	IWS Acceptance	6	1st QTR FY25

HOW

Projected Business Model: Successful integration and transition of PRISM to the Navy (and the Department of Defense) will require development of or integration with a 3D application for a specific use case (Mission Planning, Modeling and Simulations, Wargaming, After Action Assessment, Systems Health Monitoring). For early evaluation and adoption, FoVI3D can meet low-rate initial production for targeted placement but will require a manufacturing partner for full-rate production. Partnering with a prime or systems integrator is key.

Company Objectives: As specialists in 3D visualization and software development, FoVI3D will develop a targeted 3D application for a specific use case or work with a prime/systems integrator to provide guidance for effective 3D rendering, UI/UX touch panel capabilities, and provide FoVI3D's unique framework that synchronizes and relays information between workstations to enable the Common Operational Picture mode for collaborative visualization. FoVI3D's goal is to work with primes to target specific use cases within the greater Defense community to deliver a superior visualization tool to protect, defend, and support the warfighter.

Potential Commercial Applications: Beyond the many applications within the DoD, there are several commercial verticals that would benefit from improved immersive collaboration. Whether it is the modeling and simulations required for environmental conditions/hazards, migration movement, and offshore energy platforms or bringing stakeholders together for real-time design iterations, operations management, or collaborative analysis, PRISM provides the solution. Bringing experts and complex 3D data together for efficient and effective analysis. Oil & Gas, Mining, Engineering/Architecture/Construction (AEC), Energy Infrastructure, City Planning, Education, eSports.