

NAVY Transition Assistance Program

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N07-041 - OASYS Technology, LLC.

20/20 Immersive Display System Based on Eye Tracking

NEED & CUSTOMER REQUIREMENT

Need: Current training systems rely on large dome display devices which are not portable and which consume a great deal of power. A compact head-mounted system might be able to fit inside a transit case and be easily set up in the field at almost any location.

Value to the Warfighter: System offers improved simulator acuity in regions where the operator is looking and can provide an improved experience for new aircraft, such as the JSF.

Operational Gap: - Currently, many flight simulators are based on projection screens arranged in a hemispherical globe or faceted surfaces with resolutions of 20/60 to 20/80.
- The system being developed can be immersed in a wide field of view simulator with 20/20 acuity in the field where the eye is looking.

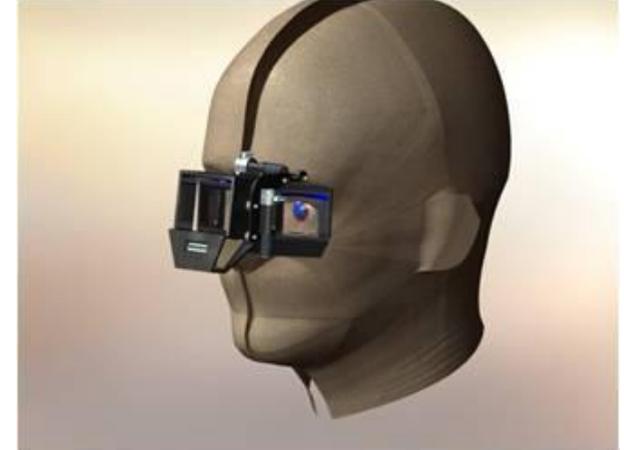
Customer Specifications: - Provides eye limited resolution within a wide immersive field of vision using latest 1280x1024 color OLED technology and custom see-through eyepiece optics.
- Software includes a smart allocation of high resolution imagery tracked to the user's gaze point.
- System is very efficient in terms of bandwidth and pixel density.

Technology Description: Designing and fabricating a novel head-mounted display system utilizing foveal imaging techniques. Delivering a functioning foveal-tracked helmet-mounted display system with accessories and spare components.

SPONSORSHIP of original SBIR/STTR Topic

SYSCOM: NAVAIR

TPOC Phone Number:
407-380-8458



TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
Performance Specification	2	Low	Spec supported by design evidence	20MAY09
Technology Demo	3	Low	Operation of critical subsystems (optics, tracker, flat panel display)	20JUN09
Bench Demo	4	Moderate	Demonstration of major performance parameters	30NOV09
System Revision	5	Moderate	Modification to system based on bench demo results	30APR10
System Delivery	6	Moderate	Customer operation of system	12NOV10

Open contract: N61339-09-C-0005 ending 08DEC10

TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

Other Potential Applications:

The beneficiaries of the advanced simulation technology developed under this SBIR effort includes all military aviators as well as all commercial pilots. Within the military community, the F-35 JSF is intended to be the primary beneficiary. The technology has a significant expansion capability to also be useful in high-end virtual reality fields such as medical imaging, geological surveys, and advanced industrial design.

Business Model:

OASYS Technology LLC is an OEM supplier of military optical equipment. OASYS' design and manufacturing capabilities are vertically integrated, with in-house design & fabrication capacity. For head-mounted display (HMD) products, OASYS needs only a supply of the flat panel displays themselves. All other components, system aspects, and product support shall be handled internally. OASYS shall develop the HMD device using specification guidance from the sponsor, and then develop a production line and quality support system to supply the product to the Government or related commercial markets.

Objective:

The Phase III objective is to simply find a sponsor, whether Government or industry, willing to purchase and use a significant quantity (50+) of head-mounted display (HMD) units. OASYS will work with the sponsor to customize the product to specific requirements and then design, build, & test 1st article units. Finally, OASYS shall develop a production line for delivery and support of the final products.

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