NAVY Transition Assistance Program

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N07-210 - Accurate Automation Corporation

Unmanned Vehicle Security Systems

NEED & CUSTOMER REQUIREMENT

Need: The Navy Unmanned Surface Vehicle (USV) Master Plan dated 23 July 2007 recognizes the benefit and need for non-lethal weapon systems suitable for integration onto small boats for added mission capability. The Defense Science Board Task Force on High Energy Laser Weapon Systems Applications found that moderate-power laser systems are highly desirable and would provide a highly flexible naval capability.

Value to the Warfighter: The ability to field a less than lethal high-energy laser system on small boat platforms capable of irradiating targets silently with pinpoint accuracy would be a significant advancement to mission planners. This USV laser weapon capability would also offer active deterrence capability for LCS unmanned boats, provide graduated response capability in littoral operating areas with a high density of small civilian craft, and enable protection for merchant marine ships against piracy.

Operational Gap: Current light-weight laser systems have insufficient power, and current, sufficiently-powerful high-energy lasers are too heavy for integration into a small boat platform.

Customer Specifications: Modify existing 1 kW laser amplifiers to eliminate four wave mixing problem allowing passive coherent combining of an array of fiber laser amplifiers resulting in increased beam power density.

Technology Description: The development of small, light weight, low-cost high energy laser systems is based on passive coherent phase combining multiple fiber laser amplifiers to increase the power density required to achieve the desired effects.

SPONSORSHIP of original SBIR/STTR Topic

SYSCOM: NAVSEA

Transition Target: Maritime Laser

Original Sponsoring Program:
PEO Ships: LCS Program, ACAT 1D

TPOC Phone Number:
540 653-4961

TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
Phase I: Demonstrate that an unmanned vehicle can be secured form attack, subversion of control, sabotage, information compromise, boarding, ensnarement and capture.	5	Moderate	Simulation results	November 2008
Phase II First Year: Demonstrate that counter pumping a fiber laser amplifier will reduce the four wave mixing products to a low power level allowing the laser amplifiers to be passively coherently combined.	5	Moderate	Reduced level of four wave mixing products	June 2010
Phase II Second Year: Demonstrate that multiple fiber laser amplifiers can be passively coherently.	7	Moderate	Coherency of combined laser beam	June 2010

Open contract: N00024-09-C-4147 ending June 30, 2010

TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

Other Potential Applications:
This laser weapons capability is broadly applicable for USVs for Navy ships (LCS) and for USVs for other missions, and can be scaled for ship platform integration.
Small, light-weight, low-cost high energy laser equipment would provide a significant benefit to both ground and air platforms with a need to deploy a high energy laser system.

Business Model:
Accurate Automation seeks partnerships with prime contractors and Defense subcontractors for transition and implementation of this laser weapons capability onto Navy and DoD platforms.

Objective:
Accurate Automation Corporation is seeking transition support from Navy and DoD program offices needing to enhance mission capability through incorporating a light-weight, high-energy laser system into unmanned and manned vehicle platforms and ship systems.

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