Department of the Navy SBIR/STTR Transition Program

Statement A: Approved for Release. Distribution is unlimited.

Topic # N131-048

Shiphandling Educator Assistant for Managing Assessments in Training Environments (SEAMATE)

Charles River Analytics Inc.

WHO

SYSCOM: NAVSEA

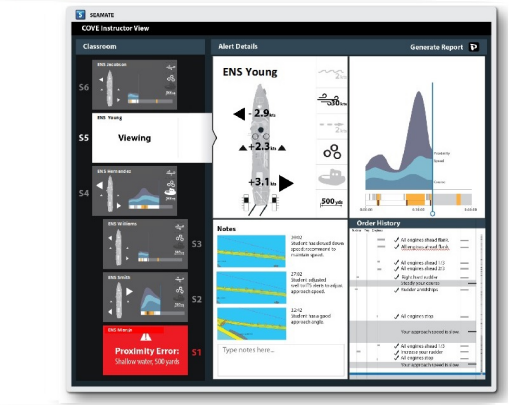
Sponsoring Program: Team Ships, PMS 339

Transition Target: Conning Officer Virtual Environment (COVE) Training Simulator

TPOC:
(202) 781-4913

Other transition opportunities: Other virtual environment (VE) training simulator systems to support surface, subsurface, and air vehicle operational training

Notes: SEAMATE's dashboard-style user interface combines high-level overviews and alerts of multiple students' real-time performance and training intervention needs.



WHAT

Operational Need and Improvement: Shiphandling instruction, currently facilitated through one-on-one interactions between expert trainers and students, is costly. Although various technologies, such as virtual environment (VE) training simulators, have been instrumental in decreasing training costs, they have not increased the student-to-instructor ratio. The Navy requires a technological solution that can increase the number of students that an instructor can effectively supervise during VE training exercises to realize the benefits of VE training systems and expand current training capacities.

Specifications Required: • Interface with existing and emerging shiphanding training technologies, including the Navy's Conning Officer's Virtual Environment (COVE) software, Intelligent Tutoring System (ITS), and Automated Assessment Engine (AAE)
• Efficiently cue instructors to an individual student's potential knowledge or skill deficiencies as they emerge through training exercises
• Provide instructors the capability to effectively focus on and work with individual students that will benefit from direct training support, and the capability to efficiently pivot attention to other students
• Replicate the overall training efficacy of the Navy's current 1:1 student-to-instructor ratio, for larger groups of students training in parallel

Technology Developed: SEAMATE provides novel, at-a-glance situation awareness displays for rapid pivoting between class-wide supervision and 1:1 student interaction; Intelligent, contextualized alerting cues to notify and direct instructor attention; and Lightweight tools for annotating student performance and streamlining individual and class-wide after-action review processes

Warfighter Value: Increases the number of students an instructor can supervise effectively, improving training throughput; Extends instructors' training expertise to a broader number of students, improving training experience without increasing burden on limited instructor resources; Reduces effort required to identify and address student support needs, improving training outcomes.

WHEN

Contract Number: N00024-15-C-4030 **Ending on:** April 6, 2017

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Design Conceptualization and Prototyping	Med	Proper data flow, positive user feedback	6	April 2017
Extended Integration, Harden Software, and Performance Evaluation	Med	Proper data flow, IA data conformance, increased instructor capacity	7	April 2018

HOW

Projected Business Model: Charles River Analytics plans to retain SBIR data rights for SEAMATE instructor support interfaces to commercial entities. SEAMATE is targeted for transition to the SWOS' Navigation and Ship handling Training and Assessment Tools (NSTAT) program.

Company Objectives: Charles River Analytics intends to integrate SEAMATE into the SWOS' sustained Navigation and Ship Handling Training and Assessment Tools (NSTAT) VE; and to extend SEAMATE's capabilities into a flexible architecture capable of interacting with air, ground, and other marine transportation instruction environments.

Potential Commercial Applications: The technologies being researched are suitable for integration with virtual environment (VE) training systems and intelligent tutoring systems (ITS) as a means to augment training and increase instructors' ability to work effectively with large student cohorts. Such industries include commercial maritime academies, commercial freight training, driving schools, primary and secondary classrooms, and instructional tutoring environments.

Contact: Ryan Kilgore, Vice President, Human Effectiveness
rkilgore@cra.com (617) 491-3474 x549