Topic: N141-019

Charles River Analytics Inc.

Intuitive User Interfaces for Task-Tailored Planning (INTUIT)
Charles River Analytics, a leading customer-focused provider of innovative R&D solutions for increasingly complex human-systems challenges, is developing Intuitive User Interfaces for Task-Tailored planning (INTUIT) to provide a set of efficient and effective mission planning user interfaces for the Navy's Joint Mission Planning System (JMPS). These role- and task-tailored user interfaces increase the usability of planning systems and efficiency of operators with varying skill levels across a range of vehicles, mission contexts, and unique tasks. Formal analysis efforts have identified task and information requirements for the mission planning process within the targeted environment, driving the design of a set of display concepts and the prototyping and demonstration environment used to validate INTUIT. Ultimately, INTUIT's user interface will be integrated into JMPS and other DoD systems.

Technology Category Alignment:

None
None
None

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SYSCOM: NAVAIR
Contract: N68335-18-C-0015
Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N68335-18-C-0015

Department of the Navy SBIR/STTR Transition Program

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NAVAIR 2018-645

Topic # N141-019

Intuitive User Interfaces for Task-Tailored Planning (INTUIT)

Charles River Analytics, Inc.

WHO

SYSCOM: NAVAIR

Sponsoring Program: Strike Planning and Execution Systems Program Office (PMA 281)

Transition Target: Joint Mission Planning System (JMPS)

TPOC:
(301)757-1884

Other transition opportunities: Any mission planning system, such as the Navy's Common Control System (CCS), Distributed Common Ground/Surface System (DCGS), the Global Command and Control System (GCCS), and other DoD mission planning systems.



Courtesy of US Navy 090406-N-7090S-402 APR 2009
(http://www.navy.mil/view_image.asp?id=73943)

Notes: As an example of an alternate SBIR transition path successfully pursued on another program, Charles River developed a tool to guide the warfighter through a formalized approach to assessing, analyzing, and forecasting human behavior (Contract Number FA8650-04-C-6403). The tool eventually underwent a successful Military Utility Assessment in 2008 and an Extended User Assessment with a Joint agency; it is now in use by DoD warfighters worldwide.

WHAT

Operational Need and Improvement: The mission planning process is labor and time intensive, complicated, and requires considerable training and proficiency. Current mission planning interfaces are difficult to understand and cumbersome to use, resulting in few operators utilizing the full power of advanced planning systems. Innovative workflows are needed to allow operators to tailor specific planning processes to optimize their output for the time and materials required.

Specifications Required: Effective interfaces must guide mission planners in a streamlined approach through highly complex and detailed mission planning procedures. The developed interface must also effectively simplify data entry and uploading process through intuitive human-computer interactions and visualization techniques. These interfaces should be highly adaptive to accommodate mission planning for new and enhanced weapon systems and platforms.

Technology Developed: INTUIT provides a set of efficient and effective mission planning user interfaces (UIs) for the U.S. Navy's Joint Mission Planning System (JMPS). These interfaces are grounded in the development of operator, task, and workflow models to structure behaviors for tailored UIs. These interfaces provide targeted support to novice and expert mission planners by adapting to unique operator, task, and mission needs, as well as fluidly exposing opportunities for advanced planning functionality when appropriate.

Warfighter Value: INTUIT's role- and task- tailored UIs provide consistent and relevant structures for mission planning across contexts, effectively streamlines system presentation and accelerates the ability of novice operators to plan missions across a range of vehicles, mission contexts, and unique tasks. Expert operators are also supported through efficient interaction mechanisms. In addition to effectively increasing the usability of planning systems and efficiency of operators across skill levels, INTUIT also reduces cognitive workload and increases the efficiency of mission planning systems for manned and unmanned vehicles, such as the JMPS.

WHEN

Contract Number: N68335-18-C-0015 **Ending on:** March 12, 2020

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Integrate proof-of-concept component UI functions with JMPS	Low	Demonstration of technical integration approach within JMPS	5	February 2017
Develop isolated software prototype of mission plan functionality	Med	Demonstration of single mission planning component	6	August 2017
Release targeted component functionality with JMPS	Med	Deployed target component with JMPS	6	October 2019
Demonstrate targeted mission planning functions through INTUIT interface integrated within JMPS	High	Interface subset integrated for mission planning within JMPS	7	November 2019

HOW

Projected Business Model: Charles River has over 30 years of steady growth providing innovative, cost-effective solutions through intelligent systems R&D. Over 100 Charles River projects have produced a wealth of advanced-technology prototype software that can facilitate the rapid integration of critical technology into operational systems. Charles River plans to develop the software and pursue either direct development for the government or license agreements with a Prime Integrator for the Program of Record.

Company Objectives: Charles River Analytics is seeking relationships with prime systems integrators for mission planning systems to support the transition of INTUIT to JMPS and other mission planning systems, as well as for opportunities to demonstrate INTUIT during live or training events to further support the value added of implementing this technology .

Potential Commercial Applications: Commercial applications of INTUIT include providing interfaces for commercial flight planning systems, such as those developed by Jeppesen or Foreflight, to improve adaptive spatial, temporal, and relational visualization capabilities of mission planning displays.

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