Department of the Navy SBIR/STTR Transition Program
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MCSC-PRR-5107

Topic # N192-051
Wargaming Event Design, Scenario Development, and Execution Software Suite for Modeling and Simulation (M&S) Tool Automation
Tau Technologies LLC

WHO

SYSCOM: MCSC

Sponsoring Program: PM Wargaming Capability (PM WGC)

Transition Target: PIONEER system

TPOC: sbir.admin@usmc.mil

Tau Technologies, 2023

Other Transition Opportunities: AFSIM, Command, MCWL Futures division, MCWL Wargaming Division

Notes: This project, named "Adjutant", aims to enhance the existing capabilities of wargaming event design, scenario development, and execution suite software by automating and integrating the interface with the underlying simulation tools. It is expected to reduce the workload and skill requirements of the wargamers and improve the efficiency and effectiveness of the wargaming process. Currently in Phase II, Adjutant has a test plan with TPMs and end user feedback. Designed to support various wargaming scenarios, across tactical, operational, and strategic levels of war. Adjutant also integrates with different simulation tools and platforms, such as AFSIM and Command. A unique feature of Adjutant is its use of an open technical exchange format (OTEF) to store data in XML format, allowing for easy parsing and conversion to other formats and use by external programs.

WHAT

Operational Need and Improvement: The operational need is to enable wargamers to design, develop, and execute wargaming events using various modeling and simulation tools without requiring extensive software development skills or assistance. The improvement is to automate and integrate the interface between the wargaming software suite and the underlying simulation tools, such as AFSIM and Command, so that the wargamers can easily configure and run the simulations based on their inputs and objectives. Another improvement is providing a user-friendly and intuitive interface for the wargamers to design, develop, and execute wargaming events, as well as generating reports and analysis of the simulation results and outcomes.

Specifications Required: A workflow management interface, similar to commercial tax preparation software, for step-by-step wargame planning and design with decision-making guidance.
Collaborative wargame planning and design by staff at distributed locations.
Ability to output wargame schedule, design, and scenario in a set of flexible open electronic formats/reports that can be translated easily into formal documents and other systems.
Development and optimization of synthetic data collection and results visualization software that can present result in a manner inherently meaningful, useful, and intuitive.

Technology Developed: We developed a workflow interface similar to commercial tax preparation software to guide planners through design processes, output schedules and scenarios in flexible open electronic formats, allowing for collaborative planning, and visualization through the integration of a 3D graphics system. Other accomplishments include the production of tech replays for event hot washes and the ability to log data for post-game analysis.

Warfighter Value: The value of this technology is enhancing the capability of wargaming as a tool for decision-making, planning, training, experimentation, and more. By integrating the wargaming software suite with the underlying simulation tools and automating the interface, we can reduce both the workload and the skills gap requirements for the wargamer. This improves the efficiency and effectiveness of the wargaming process. The increase in complexity results in a higher fidelity of the simulations. All this provides more insightful feedback to wargamers.

WHEN

Contract Number: M67854-21-C-6504   **Ending on:** Jul 05, 2023

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Prototype demonstration	Low	Successful demonstration adjutant using AFSIM as the simulation tool	4	2nd QTR FY23
Adaptation to Command environment	Medium	Successful adaptation with Command environment using an open technical exchange format (OTEF)	5	3rd QTR FY24
Integration within Command environment	Medium	Successful integration with production Command environment using an open technical exchange format (OTEF)	6	TBD
Testing of capability	Medium	GAT and end user feedback on Adjutant's usability, functionality, performance, and value	7	TBD

HOW

Projected Business Model: The projected business model is to license the software suite to the government and other potential customers, such as defense contractors, research institutions, academic organizations, etc. The company will also provide technical support, maintenance, and updates for the software suite. The company will seek post-Phase II funding from the government or other sources to continue the development and transition of the technology. The company will also explore other revenue streams, such as offering training and consulting services, creating customized solutions for specific wargaming needs, and participating in wargaming events and competitions.

Company Objectives: The company aims to leverage its expertise and experience in M&S, wargaming, and software development to create innovative and effective products that can meet the needs and expectations of the customers.

Potential Commercial Applications: Defense contractors: The technology can be used by defense contractors to design, develop, and test new weapons systems, platforms, tactics, etc. using wargaming simulations. The technology can also help defense contractors to demonstrate their capabilities and products to potential customers and partners using realistic and immersive scenarios.
Research institutions: The technology can be used by research institutions to conduct studies and experiments on various topics related to wargaming, such as human factors, decision making, game theory, etc. The technology can also help research institutions to disseminate their findings and recommendations using data-driven reports and visualizations.
Academic organizations: The technology can be used by academic organizations to teach and train students and professionals on wargaming concepts, methods, and applications.

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