Topic: N181-033

Intelligent Automation, Inc.

Virtual Assistant for Combat System Console Operators Utilizing Artificial Intelligence Algorithms
Combat system watchstanders face increasingly complex operational environments. IDA is a digital assistant for combat systems that use AI to enhance situational awareness and reduce operator cognitive load. IDA supports assessments of complex situations by evaluating radar and combat system information, and alerts watchstanders to conditions that require action. Operators can interact with IDA via voice commands to reduce inputs and automate complex responses to eliminate repetitive mundane tasks to improve efficiency and effectiveness. IAI is a technology and innovation company that has been providing advanced technologies for the warfighter for over 30 years.

Technology Category Alignment:
Command, Control, Communications, Computers, & Intelligence (C4I)
Autonomy
Ground and Sea Platforms

Contact:
Bryan Stewart
bstewart@i-a-i.com
(240) 406-5506
https://www.i-a-i.com/
SYSCOM: NAVSEA
Contract: N68335-19-C-0753
Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N68335-19-C-0753
Tech Talk: https://youtu.be/JfIKrdMzM4U

Department of the Navy SBIR/STTR Transition Program

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IDA: Intelligent Digital Assistant
Intelligent Automation, Inc.

WHO

SYSCOM: NAVSEA
Sponsoring Program: PEO IWS, PEOC4I
Transition Target: AEGIS Combat System
TPOC:
(615)553-9226
Other transition opportunities:

Photo Courtsey of US Navy

WHAT

Operational Need and Improvement: Due to the realities of emerging threats in a more complex operational environment, higher track volumes, and against increasingly technologically-sophisticated adversaries, there is a need to improve watchstander (console operator) reaction time and to ensure operators do not succumb to information overload. The Navy requires a virtual assistant for the AEGIS combat system that will leverage AI algorithms and a suitable modular software architecture.

The assistants will improve team performance by continuous by autonomously monitoring data, executing tasks, and distributing critical information throughout the AEGIS Combat System (ACS). Watchstander performance will be enhanced with customized voice commands and automated responses designed to integrate seamlessly into tactical operations.

Specifications Required: IDA is designed to operate on AEGIS computing infrastructure and will need to integrate with AEGIS Combat System computers, consoles and communications equipment.

The virtual assistant will demonstrate >50% improvement over an unassisted operator (on average) in the number of tracks that the operator can efficiently handle.

Technology Developed: IDA is a highly integrated set of AI enabled services that support tactical operations and mission planning and execution for complex task management. Components include: voice recognition; tailored to mission vernacular; data fusion models; complex workflow construction and data distribution system integrations.

Warfighter Value: Our virtual assistant supports AEGIS watchstanders with AI to reduce VAB and trackball actions by up to 90% and provides critical data with voice commands to improve focus on critical tactical decisions. Our system is highly configurable and ready to support AEGIS and other integrated combat systems, e.g. the Ship Self-Defense System (SSDS), and the Navy's Future Integrated Combat System.

WHEN

Contract Number: N68335-19-C-0753

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Develop prototype for CDS Console	Med	Demonstrate voice commands and workflows on CDS commercial equivalent console	TRL 4	October 2020
Delivery of Multi-mission capable Prototype	Med	Demonstrate IDA support for multiple mission scenarios across multiple users	TRL 5	November 2021
Seminal Transition Event	High	Successful test event at land based test site	TRL 6	August 2022

HOW

Projected Business Model:
IAI will develop and maintain IDA components and make them available for other tactical and commercial applications through contract engineering and licensing agreements. IDA will be made available to multiple combat systems though integration with CDS operating systems software developed by Leonardo DRS for CDS and other tactical consoles, including those being piloted via the Virtual Pilot Ship program and other efforts to more rapidly deliver combat capability to the Fleet, e.g. the Virtual Twin (VT).

Company Objectives:
Identify AEGIS and other combat system stakeholders to identify opportunities for additional IDA evaluation and integration with combat system components.

Potential Commercial Applications:
IDA's flexible and configurable architecture makes it ideal for integration into other operator terminal applications to assist users with complex tasks such as intelligence analysts, medical personnel, and transportation network managers.

Contact: Bryan Stewart, Associate Director Technology Transition
bstewart@i-a-i.com   (240)406-5506