

Intelligent Tutoring Authoring and Delivery System (ITADS)

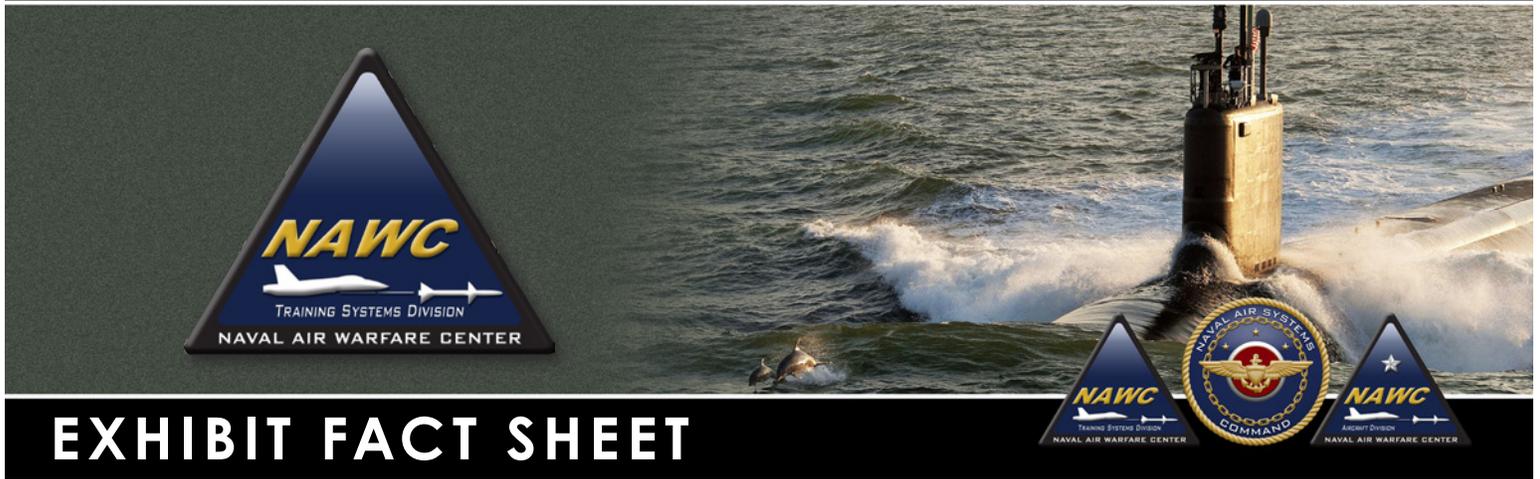


EXHIBIT FACT SHEET

The Intelligent Tutoring Authoring and Delivery System provides two cornerstones for the future of Navy training: Authorable Training Content and Intelligent/Adaptive Training for Navy Ratings.

ITADS is sponsored by OPNAV N-15 and managed by the Naval Air Warfare Center Training Systems Division (NAWCTSD). The program is located primarily at the Navy's Center for Information Dominance (CID) in Pensacola.



Current Status of the Research

This program is the next generation of intelligent tutoring systems (ITS). It combines the latest in artificial intelligence, interactive training, content authoring, and training management.

ITS demonstrates the capability to provide excellent Warfighter training for the United States military. ITS comes at a high cost due to the resources necessary to develop, customize, and maintain training content. ITADS changes the cost paradigm by delivering an ITS that provides effective training for Navy IT students and the capability to author content affordably by schoolhouse personnel.

Realistic Navy Shipboard IT Environment

In coordination with SPAWAR, students are immersed in the Navy's COMPOSE 4.x shipboard network environment before arriving at their first duty assignment. This translates to significantly less time required to become operationally proficient with shipboard computer systems, networks, protocols, and procedures.

Students trained by ITADS have a stronger grasp of fundamental skills and are fleet-ready versus students trained only by traditional methods.

Virtualized Training Network for Each Student

Students interact with a virtualized COMPOSE environment (servers, workstations, and routers) within their own independent network, using configurations and naming conventions modeling Naval shipboard networks. Scenarios incorporate non-virtualized elements not typically utilized in virtualized training systems:

- Access to relevant Navy resources (SAILOR 2.1, SOM, IETM, and MRC)
- Enforcing physical security
- Inspecting physical equipment to resolve scenario hardware issues
- Q&A interactions with a simulated shipboard user



Problem-based Interactive Scenario Training

ITADS training is provided in the context of problem-solving exercises modeled after fleet-identified IT tasks and problems. Every exercise includes training content for prescribed learning objectives, along with immediate and delayed feedback, followed by an after action review that summarizes trainee performance and provides remediation recommendations.

Scaffolded Learning Approach

As students execute problem-solving exercises, ITADS assesses their performance and updates a dynamic student model that maintains an estimate of their knowledge and skill mastery. The automated tutor monitors a student's progress and provides scaffolded hints and feedback. The scaffolding adapts the nature and frequency of the hints and feedback as trainees gain expertise. Instructional help is faded as students become increasingly competent in the required skills.

Authorable Training Content

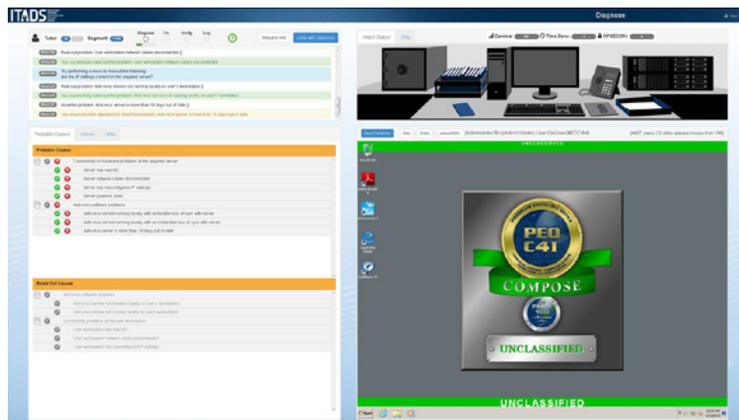
ITADS allows schoolhouse level personnel to create, edit, and delete content with ease. Using a Graphical User

Interface (GUI), an end user can work with all elements of the system (virtual environment, text, graphics, audio, and video) to build and maintain training scenarios to meet ongoing and changing needs. Authoring capability provides for rapid content development, enhances maintainability, and measurably reduces the cost of training content development.

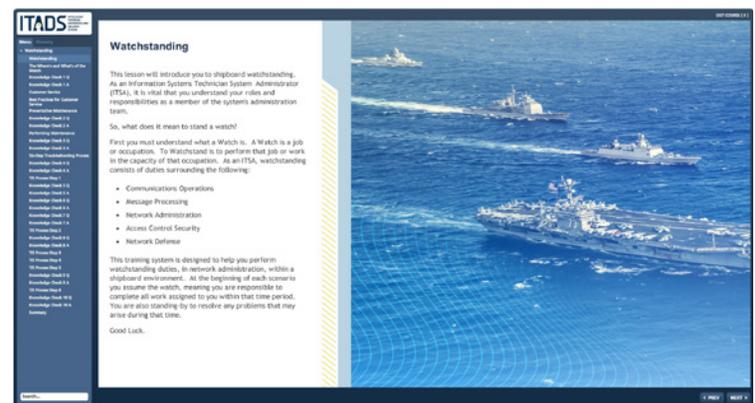
ITADS Growth Vector

ITADS is ready to move forward with:

- Scalability to accommodate large training throughput
- Portability to accommodate training from disparate and/or waterfront locations
- Concurrent authoring and content collaboration
- Enhanced problem set with dual problem scenarios and new scenario topics
- Wireless capability to allow for instructor mobility throughout the training environment
- Tutor fidelity with enhanced hinting and feedback, tutor algorithms, rationale elicitation, and student motivational factors



ITADS student user interface



Didactic lesson interface