

Consolidated Afloat Networks and Enterprise Services (CANES)

Executive Summary

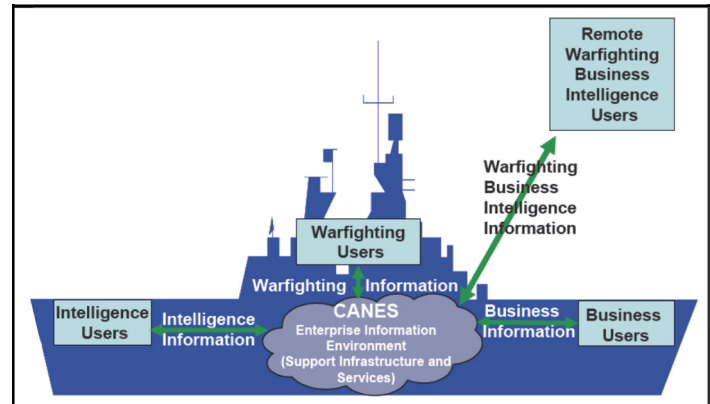
- The Commander, Operational Test and Evaluation Force (COTF) completed the Consolidated Afloat Networks and Enterprise Services (CANES) IOT&E for the unit-level variant on USS *Higgins* (DDG 76) from August 2014 through March 2015. COTF suspended the test at the request of the program manager to allow correction of cybersecurity vulnerabilities.
- DOT&E assessed the unit-level variant as operationally effective, suitable, and survivable. CANES provides computing resources; throughput and transfer speed; and reliability, availability, and maintainability necessary for the ship's missions; however, the Navy should address deficiencies related to training, network mapping, and emissions control conditions. The USD(AT&L) approved the Full Deployment Decision (FDD) on October 13, 2015.
- COTF began the FOT&E of the force-level CANES variant on the USS *John C. Stennis* (CVN 74) in July 2015. The test will conclude in 2016 with cybersecurity testing. DOT&E's initial observations are that the force-level variant will provide the network and enterprise capability to enable the crew to complete assigned missions and tasks.
- The Navy plans to conduct an FOT&E for the submarine variant in FY18.

System

- CANES is an enterprise information system consisting of computing hardware, software, and network services (e.g., phone, email, chat, video teleconferencing, web hosting, file transfer, computational resources, storage, and network configuration and monitoring). CANES will replace legacy networks on ships, submarines, and shore sites.
- The CANES program will mitigate hardware and software obsolescence on naval vessels through the increased use of standard components and regularly scheduled hardware and software updates.

Activity

- COTF completed IOT&E for the CANES unit-level variant onboard USS *Higgins* from August 2014 through March 2015. COTF suspended testing at the program manager's request to allow for correction of cybersecurity vulnerabilities.
- In July 2015, DOT&E submitted an IOT&E report of the unit-level variant ships, detailing the results of testing to inform the FDD. USD(AT&L) approved the FDD on October 13, 2015.



- The CANES network provides a single, consolidated physical network with logical sub-networks for Unclassified, Secret, Secret Releasable, and Top Secret security domains. It includes a cross-domain solution for information transfers across these security boundaries. This consolidation is expected to reduce the network infrastructure footprint on naval platforms and the associated logistics, sustainment, and training costs.

Mission

Shipboard users will use the CANES network to:

- Host their applications in support of naval and joint operations with computing resources and networks services
- Support weapon systems, command and control, intelligence, and business information applications

Major Contractors

- Northrop Grumman – Huntsville, Alabama
- BAE Systems – Rockville, Maryland
- Serco – Reston, Virginia

- The CANES Program Office conducted an integrated test of the CANES force-level variant aboard USS *John C. Stennis* in June 2015. COTF conducted a maintenance demonstration concurrently.
- COTF began FOT&E on the force-level variant in July 2015 aboard USS *John C. Stennis*. The test period will end after cybersecurity testing in 2016.

FY15 NAVY PROGRAMS

Assessment

- DOT&E assessed the CANES unit-level variant as operationally effective, suitable, and survivable. Network performance among all security enclaves enabled the crew to complete assigned tasks and missions while pier-side and underway. Hardware and software met reliability, availability, and maintainability requirements.
- The program manager successfully mitigated cybersecurity vulnerabilities, including working with the fleet personnel to implement recommended procedures and security updates.
- Integrated testing of the CANES force-level variant in June 2015 demonstrated the system's ability to meet basic functional and performance requirements.

- DOT&E's initial observations of the FOT&E for the force-level variant are that the variant provided the required communications and information technology support that enabled the crew to complete assigned tasks and missions.

Recommendations

- Status of Previous Recommendations. The Navy addressed all previous recommendations.
- FY15 Recommendation.
 1. The Navy should begin planning the FOT&E for the submarine variant scheduled for FY18.