Naval Combat System Simulator (NCSS)

Overview

CAE's Naval Combat System Simulator (NCSS), formerly known as the Naval Tactical Mission Trainer (TMT), is used to train and educate sailors and officers in a range of disciplines, including sensor operations, communications, and weapon systems. CAE's NCSS is based on commercial-off-the-shelf (COTS) software and CAE's synthetic environments. It has been designed for complete flexibility and supports multiple roles and ships, and can provide individual, team, and collective training. The NCSS also allows for basic crew training at the undergraduate level through to advanced crew conversion and continuation training at the graduate level.

Key benefits

CAE's NCSS is designed to meet all naval tactical training needs. Benefits include:

➔ Flexible and reconfigurable training device;
➔ Train in a networked environment from any location;
➔ Customizable training scripts;
➔ Easy to use instructor controls;
➔ Enhanced lessons learned through brief/ debrief capabilities.

Flexible solution

This state-of-the-art training device can be configured to provide the basic skills of combat tactics and operation of weapon systems, sensors, and voice and data communication systems. This helps reduce training cost by maximizing the use of a lower fidelity training device. Once the basic skills are learned, the student is ready to train using an advanced version of CAE's NCSS, customized with combat management system (CMS) parameters. The NCSS is flexible and can be configured to allow for a classroom set-up with any number of instructor and student workstations, and can also be spread across multiple physical sites and then networked for distributed training. CAE's NCSS can also be integrated to the actual operator software from a deployed CMS to provide on-ship training, thus ensuring absolute fidelity with the operational ship system.

Operational training

Sailors and officers will train and rehearse as they operate using CAE's NCSS. They can be trained in a range of disciplines and operations, including anti-air warfare (AAW), anti-surface warfare (ASuW), anti-submarine warfare (ASW), mine warfare (MW) and search and rescue (SAR).

Features

The rich features and functionalities provided by the training device are synonymous to those systems found on a modern warship, including:

➔ Weapon systems (missiles, guns, torpedoes);
➔ Navigation and search radar systems;
➔ EO/IR targeting systems;
➔ Fire control systems;
➔ Sonar/acoustic systems;
➔ Integrated communications and datalink systems;
➔ Physical and electronic countermeasures (chaff/flare/jammers).

Instructor operator station

The instructor has the ability to control multiple student stations and can provide each student a training scenario to run in isolation or participate as a crew on a platform. Multiple platforms can be included within a scenario to allow for multi-ship or task group operations' training.

Within the training scenario, all aspects of the students' actions can be pre-determined or dynamically adjusted as required. In addition, the instructor can monitor and reset all of the systems, subsystems, and sensors available to a student.
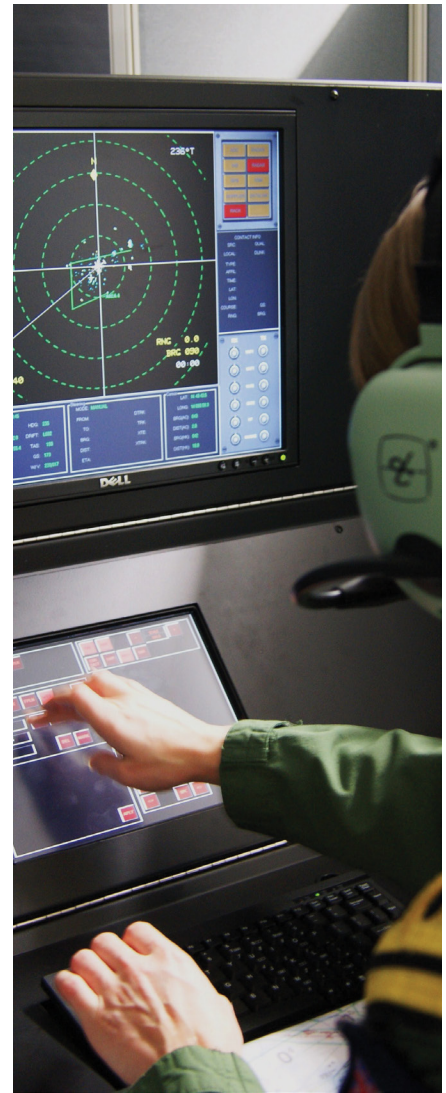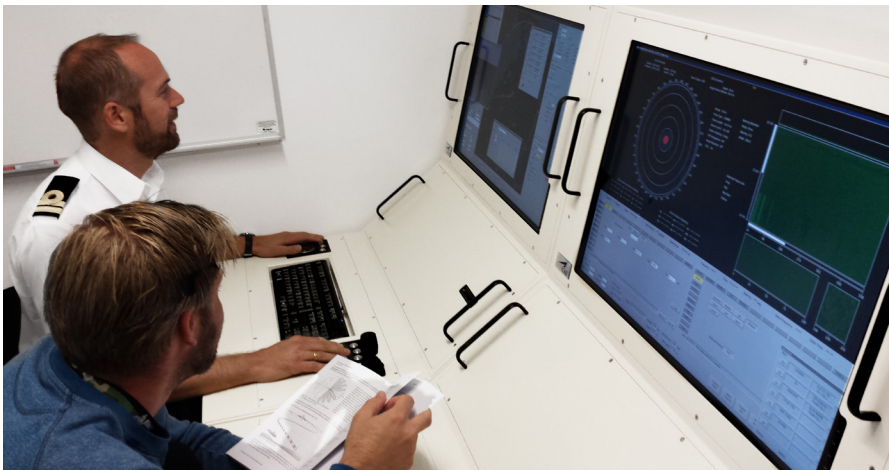
Technology

The CAE NCSS is designed and built for use on a standard PC platform using Windows operating systems. High-end gaming video cards are used when realistic graphics are required such as for an EO/IR view. The lifecycle cost of the NCSS is reduced and made more efficient by the use of COTS hardware and software.

Program example — Naval Warfare Training System for Swedish Navy

CAE delivered a comprehensive, simulation-based training solution to equip the Naval Warfare Training System (NWTS) for the Swedish Navy at the Naval Warfare Centre in Karlskrona. The NWTS comprises simulation software, hardware, wargaming consoles, and instructor operator stations that are being used to train and educate Swedish Navy sailors and officers in naval tactics, procedures and doctrine.

CAE's NCSS is a major element of the overall solution consisting of 52 student stations and 13 instructor operator stations in addition to synthetic environment and computer-generated forces software. The NCSS is used as the primary training device for naval sonar operators, C4 system operators, and naval communications specialists.

CAE