

# PC-based Open-architecture for Reconfigurable Training Systems (PORTS) Littoral Combat Ship (LCS) Combat System Trainer (CST)



## EXHIBIT FACT SHEET

The LCS CST is a part task trainer that supports the LCS Train-to-Qualify (T2Q) requirements for combat system console familiarization and operation. Under T2Q, the Navy requires that only fully-trained crewmembers deploy with LCS ships. Such on-shore regimens require the most advanced training systems available—like the LCS CST.

The LCS CST Train-to-Qualify support includes the high-fidelity emulated tactical system interfaces for both LCS 1 and LCS 2 ship designs, as well as instructor controls for simulation entity manipulation and trainer support functions. The training device includes high-fidelity console mockups with tactical user interface subsystems. The full system will provide five Instructor Operator Stations and 16 classroom computers tied into a single network.

The new system will train Surface Warfare Officers en route to LCS Department Head billets in combat system console and communication system operations. Additional curricula are in development to expand the qualification topics. Other expanded roles for the LCS CST include Prospective Commanding Officer and Prospective Executive Officer training.

The trainer's LCS 1 mode is an emulation of the Lockheed Martin COMBATSS-21 Combat Management System. It includes 57-millimeter gun and Rolling Airframe Missile (RAM) emulations. All external camera views are supported. The training device includes an emulation of the Programmable Integrated Communications Terminal (PICT) that is PORTS-trainer-interoperable.

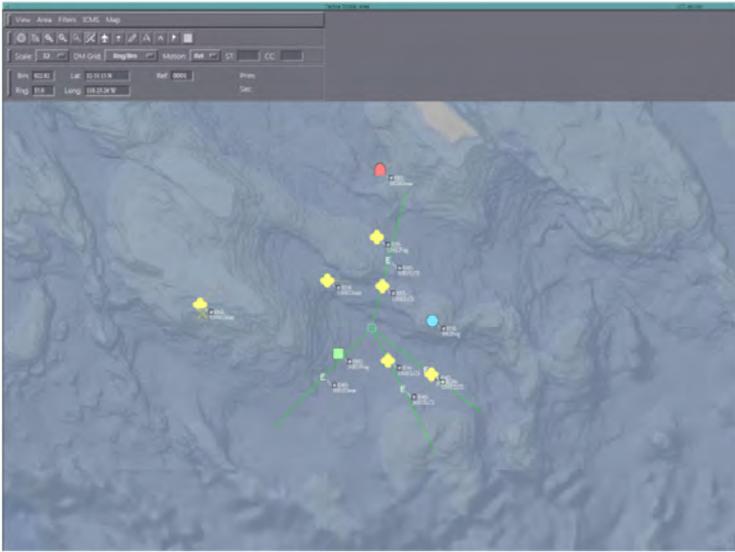


### *LCS-1 Emulation*

The trainer's LCS 2 mode is an emulation of the General Dynamics Integrated Combat Management System (ICMS). It includes 57-millimeter gun and SeaRAM Anti-Ship Missile Defense System emulations. All external camera views are supported. An emulated Keyswitch Integrated Terminal Equipment (KITE) voice communication system is included. It is interoperable with other PORTS-based trainers.

Each trainer student station is a highly realistic console mockup based on the shipboard hardware. The instructor stations include touch screens, wall projectors, and custom voice communications systems in the fielded system.





### ***LCS-2 Emulation***

The PORTS family of trainers is used in Surface Navy training systems to implement a wide range of tactical hardware and software systems in reconfigurable PC-based trainers that are also scalable, flexible, and run-time changeable. These trainers support curricula for Tactical Action Officer (TAO), sonar operators, Combat Information Center operations, Air Intercept Controllers, Tactical Data Link Operators, and LCS Mission Package Operators.

Running the Combined Tactical Training and Analysis System (CTTAS) from Northrop Grumman as its core simulation engine, the PORTS suite of applications is a hybrid of Government and Commercial software. The contractor programming has been primarily done by Northrop Grumman Information Systems (NGIS) located in Middletown, Rhode Island, and has been deployed in various forms for over 20 years.

The LCS CST is ready for delivery to the Surface Warfare Officers School (SWOS) in Newport, Rhode Island.