

# DDG-51 Machinery Control System (MCS)

## NAVAL AIR WARFARE CENTER TRAINING SYSTEMS DIVISION ORLANDO FLORIDA

### EXHIBIT FACT SHEET



## DDG-51 Machinery Control System (MCS)

The Machinery Control System (MCS) simulator provides a realistic training environment for the Arleigh-Burke (DDG-51) guided missile destroyer gas-turbine propulsion plant training.

The MCS simulator enables training for prospective Commanding Officers, Executive Officers, Department Heads, and Engineering Officers of the Watch students. Designed to closely resemble the DDG-51 Central Control Station and the Shaft Control Unit located in the Main Engine Room, its primary purpose is to teach gas turbine principles, watch keeping practices, and the full scale operation of the DDG-51 MCS consoles. The MCS simulator consoles interface with, and are controlled by, a central Instructor/Operator station.



19G4 Trainer MCS Consoles

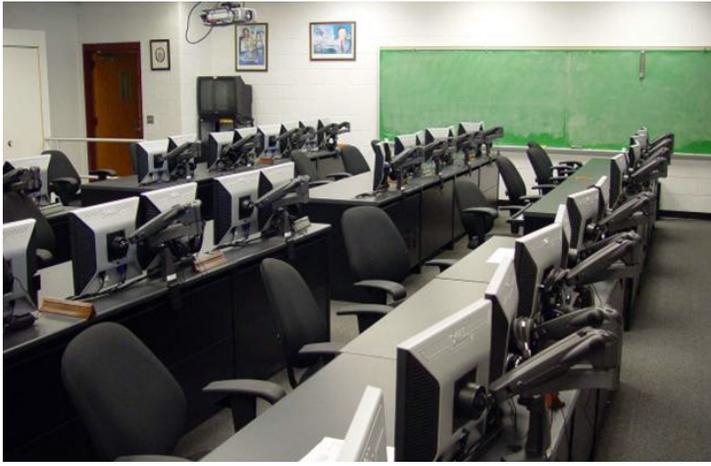
Although effective for training the baseline DDG-51 class, the ever-changing configurations of the Arleigh Burke required an adaptable and highly configurable training solution. Rather than pursue costly and time consuming development of separate, hull-specific MCS hardware labs, the 19G4 was augmented with a PC-based alternative. This allowed the Surface Warfare Officers School (SWOS) to keep up with the increasing student throughput and provide instructors greater flexibility in course scheduling.

### 19G4A MCS Desktop Simulator

This system became a PC-based solution running an updated version of the MCS software implemented as a Multiple-Trainer Simulator Environment. The DDG-51 Class MCS Desktop Simulator can be utilized either as a stand-alone watch station trainer for individual instruction, a watch-team trainer with two or more consoles being operated in an integrated mode, instructor-led training, or as an integrated extension to the Multi-Mission Team Trainer.

The PC-based nature of this training device also provides flexibility for trainer upgrades to accurately reflect new systems and configurations installed in the Fleet. The system currently implemented at SWOS, running on COTS software, can also be easily extended to support training at fleet concentration centers or schoolhouse environments.





One of the key features of the system is the ability to present the various DDG-51 class configurations through a touch-screen interface. This allows for a relatively inexpensive training solution that realistically simulates user interaction with the switches, gauges, and controls on an actual engineering console.



For further information on this exhibit, or on business opportunities with NAWCTSD, please contact our Business Support Team by telephone at (407) 380-4763, by e-mail at [orlo\\_businesssupportteam@navy.mil](mailto:orlo_businesssupportteam@navy.mil), fax at (407) 381-8825, or by mail at Business Support Team, NAWCTSD, 12350 Research Parkway, Orlando, FL 32826.