Manned Flight Simulator

Air Combat Environment Test & Evaluation Facility

Overview

The Manned Flight Simulator (MFS) facility is operated by the Aircraft Simulation Division at the Naval Air Warfare Center Aircraft Division, Patuxent River, Md. MFS is a high-fidelity, man-in-the-loop RDT&E flight simulation laboratory, providing a synthetic environment capable of supporting flying qualities and performance evaluation, mission scenario flight test, avionics integration testing, as well as accident investigations and prototype evaluations. This alternative to in-flight testing can provide engineering results at a much lower cost and greater return in terms of training and familiarization for engineers and test pilots.


F/A-18 in M2DART

Capabilities

For programs in the conceptual or developmental stages, MFS can be used as an engineering tool to perform RDT&E of developmental hardware and software. The hardware and software designed, developed and integrated within MFS follow a generic, modular approach to accommodate growth, changeability and the continual integration of leading-edge technology. The simulations combine high-fidelity flight dynamics models, flight control hardware, avionics and displays systems simulations. The architecture can support many independent or joint simulations, allowing war gaming, and distributed mission scenarios when tied to hardware in the loop stimulation labs.

Lab Facilities

The laboratory stations consist of a six-degree-of-freedom motion base, providing acceleration cues for conventional takeoff and landing, hover or transition; one 3-channel front projection laboratory station; four M2DART display stations; an out-the-window visual projection system; intercom/aural cueing; 1553 bus connections, a standard cockpit interconnect; and data capture capabilities. Any of the stations can be used for covering the spectrum of air-to-air, air-to-ground, combat, formation and training scenarios, and security requirements.

Cockpits

Eight cockpits are provided for interchangeable use within the lab: the F-14 D; a single seat F/A-18 A/C; a dual seat F/A-18 E/F; a V-22; a side-by-side generic helicopter; two single seat, multi-reconfigurable cockpits; and an H-60 (Romeo or Sierra) cockpit.


F/A-18 E/F


H-60

For more information contact (301) 757-0800

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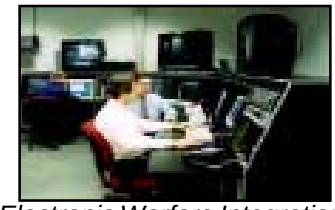
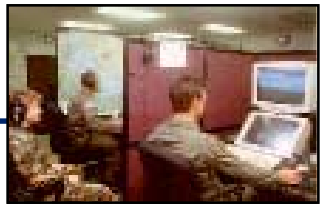
Interoperability

MFS is linked with other ACETEF laboratories, providing support in multi-laboratory simulation exercises, and is experienced in networking simulations in either the closed loop ACETEF environment or with DoD joint service exercises. Performing installed systems testing in this closed environment has added a tremendous value for programs in evaluating mission survivability in a realistic and repeatable environment.


Manned Flight Simulator


Electronic Warfare Integration System Test Lab


Shielded Hangar


Warfare Simulation Lab


Large Anechoic Chamber


Threat Air Defense Lab


Operations & Control Center


Comm, Nav, IFF Lab


High Performance Computing Center

Prototyping/Initial Pattern Unit Development

An in-house electrical and mechanical engineering design and fabrication shop manufactures prototype simulation equipment and initial pattern unit devices for training purposes. Special-purpose hardware and software can be designed, developed and tested. Processes for configuration management, and build-to-print specifications are produced in support of initial pattern unit development.