



*Officer of the Deck coordinating maneuvers with key stations aboard the ship.*



## FLEET INTEGRATED SYNTHETIC TECHNOLOGY TESTING FACILITY (FIST2FAC) - LITE

Allowing Sailors to interact with artificially intelligent forces in countless virtual settings.

*The Office of Naval Research conducts technology proof-of-concept demonstrations at the ONR-sponsored Fleet Integrated Synthetic Technology Testing Facility (FIST2FAC) located at the Naval Undersea Warfare Center (NUWC)-Pacific Detachment on Ford Island in Pearl Harbor, Hawaii. A recent demonstration also connected the lab with proof-of-concept technology installed aboard the USS Michael Murphy, (DDG 112) while pier-side in Pearl Harbor.*

*FIST2FAC combines hassle-free setup, software and gaming technology to help naval forces develop strategies for diverse missions and operations. It allows Sailors to interact with artificially intelligent forces in countless virtual settings — and train for multiple missions simultaneously. The system can replicate scenarios involving surface, subsurface and air platforms, lethal and nonlethal weapons, and more.*



*Employment of defensive measures using virtual non-lethal and lethal short-range weapons.*



*Bridge Lookout on a Virtual Bridge Wing Display, employing virtual binoculars.*

## FIST2FAC: A MODULAR, ADAPTABLE LABORATORY

The technology on display, called “FIST2FAC Lite,” is a scaled-down representation of the lab, reflecting the adaptive ability to create many combat scenarios for any challenge a ship might face worldwide — from undersea threats to navigating hostile waters. The software is reusable and can be modified for different environments.

FIST2FAC Lite is currently configured as a counter-small boat threat integrated training capability. Initiatives explored in this system include introducing Augmented Reality technology aboard a ship’s bridge, allowing warfighters to engage in virtual combat scenarios to rehearse a full range of command and control procedures, from determination of hostile intentions through the execution of coordinated defense procedures using real and simulated shipboard and air assets. FIST2FAC Lite also incorporates an engineering version of Joint After-Action Reporting – Resource Library (JAAR-RL) government software, integrated to examine options to capture and assess human performance parameters.

## TRANSITION TO THE FLEET

Currently, FIST2FAC is shore-based, but one day the capabilities developed there may be available to ships at sea. A more complex version of the integrated small boat threat training capability represented here is such transition success story, undergoing final product development for eventual delivery to the Fleet.



*Shipboard controller in communication with airborne helicopter.*



*Ship's Tactical Action Officer coordinating overall defense of the ship.*



*Small Craft Attack Team (SCAT) Gunner and Loader coordinating small craft defensive fires with leadership on the Bridge. Shown here employing an emulated .50cal M2 gun and 60degree FOV high-resolution virtual reality glasses.*

For further information on this exhibit, or business opportunities with ONR, please contact the Training S&T Program Officer, Human & Bioengineered Division, Warfighter Performance Department, Office of Naval Research at (703) 696-4501, or by mail at Office of Naval Research, 875 N. Randolph St. Arlington VA, 22203

