P-3 Air Crew Tactical Team Trainer (PACT3)

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The P-3 Air Crew Tactical Team Trainer (PACT3) provides a first-ever, PC-based (small foot-print, low cost) training capability for currently fielded P-3C Maritime Patrol and Reconnaissance Aircraft, allowing cross-platform (Aviation, Surface, Sub-Surface) coordinated Anti-Submarine Warfare (ASW) integrated team training. PACT3, with very minor flight dynamics model modifications, can also be used to represent the Navy's new P-8A Maritime Patrol Aircraft.

Five of the P-3 Stations and an Instructor Station have been developed for the PACT3 system. The capabilities of these stations include functionality to perform a wide range of ASW training. The system's tactical nucleus (Pilot, Tactical Coordinator, Sensor 1, Sensor 2, and Sensor 3) was developed leveraging existing simulations to allow a much shorter solution timeline than ordinarily achieved under the usual Program Objective Memorandum (POM) process.

The effect on the Warfighter will be dramatic. Commander Patrol Reconnaissance Group (CPRG) had previously identified a 25% decline in ASW cue-to-kill proficiency while P-3 units were remotely deployed. Deployed aircrew will now be provided with an integrated ASW training platform that allows them to maintain their ASW kill-chain proficiencies.

The PACT3 provides Science and Technology (S&T) innovation in four principal areas: (1) non-acoustics stimulation, signal processing, and display, (2) acoustics processing, (3) training system capacities, and (4) system interoperability. Using a Mission Rehearsal Tactical Team Trainer (MRT3) and Effective Active Acoustic Simulation (EFAAS)-based technology baseline, the PACT3 provides innovative software implementations of active and passive sensing to include: Multi-static processing, Bottom Reverberation, Biologic Clutter and Surface Scattering

models as well as the RADAR, Magnetic Anomaly Detector (MAD), and Electronic Support Measures (ESM) non-acoustic sensors for the P-3 ASW tactical nucleus.

During the development of the PACT3, a system that simulates the output of the Air Deployable Active Receiver (ADAR) sonobuoy in an Improved Extended Echo Ranging (IEER) environment was developed and integrated into the trainer. IEER is a mono/multistatic acoustic sensor system that utilizes an ASW aircraft, supporting acoustic source, and acoustic receiver in a coordinated ASW search and surveillance mission against conventionally powered submarines operating in shallow water environments as well as all submarines operating in deep water. The innovative development of the Improved Extended Echo Ranging (IEER) provides P-3 aircrews with vastly enhanced ASW training not previously available.

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, by fax at (407) 381-8744, or by mail at Business Support Team, NAWCTSD, 12350 Research Parkway, Orlando, FL 32826.