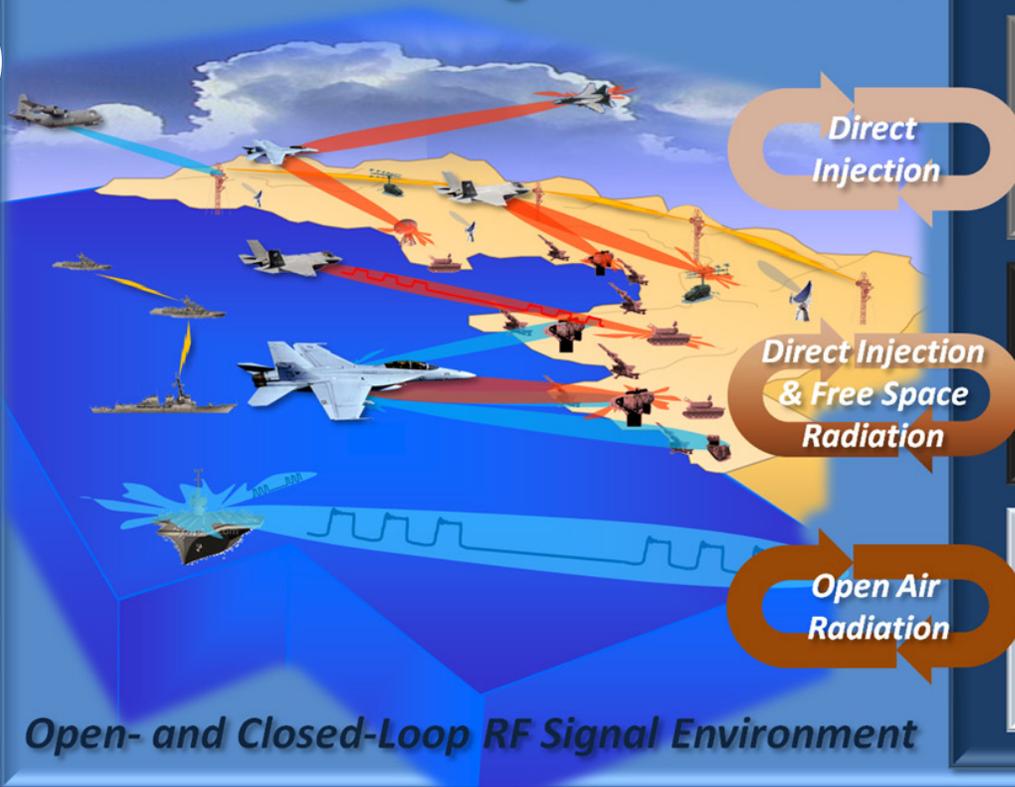


Electronic Warfare Signal Environment



T&E Environment



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T&E Capability

NEWEG enables ranges and facilities to effectively test EA, EP and ES systems with multi-port amplitude, phase, TDOA, Doppler and SEI systems in an open- and closed-loop environment



NEXT-GENERATION ELECTRONIC WARFARE ENVIRONMENT GENERATOR (NEWEG)

A realistic, reactive, and real-time representation of live assets and threats in a joint environment.

The Naval Air Systems Command (NAVAIR) Next-Generation Electronic Warfare (EW) Environment Generator (NEWEG) architecture evolves the state-of-the-art in EW simulation and stimulation technology; establishes hardware commonality between DoD facilities; and provides an adaptive, modular architecture that accepts technology insertions required for future systems testing. NEWEG creates a realistic, reactive, and real-time representation of live assets and threats in a joint environment. Compared to current Test and Evaluation (T&E) capabilities, NEWEG provides a higher fidelity threat-signal simulation, delivers a closer correlation between laboratory testing and flight testing, and offers more confidence and ultimately, cost savings.

Delivers a closer correlation between laboratory testing and flight testing.



The NEWEG architecture closes the multiple beam jammer gap by incorporating an integrated, dynamic, motion-based Radio Frequency (RF) receive/transmit and analysis subsystem into the Advanced Systems Integration Laboratory (ASIL) located at Patuxent River, Maryland.

The architecture improves EW threat simulations with robust real-time and post-test signal verification, analysis, correlation, and jammer response/technique analysis tool set. The NEWEG architecture is a government-owned, configuration controlled and managed stimulator for Test and Evaluation (T&E). This higher fidelity simulation capability includes a modular, scalable open architecture design, as well as a wideband, high-pulse density integrated Amplitude, Phase, Doppler and Time Difference Angle of Arrival (AOA). NEWEG includes a Common Threat Library Database and M&S Software Toolset using EWIRDB and OPANA. The architecture improves EW threat simulations with robust real-time and post-test signal verification, analysis, correlation, and jammer response/technique analysis tool set.

The Next Generation Electronic Warfare Environment Generator is owned by the Integrated Battlespace Simulation and Test (IBST) Department and is organized into two development Blocks: Block A, focused on T&E of multiple beam jammers, and Block B focused on Environmental Assessment and Electronic Support (ES) T&E.

BLOCK A

Block A of the NEWEG architecture is the Multiple Jammer Characterization (MJC) subsystem. The MJC subsystem project is fielded at the Air Combat Environment Test and Evaluation Facility (ACETEF), Patuxent River, MD and is used extensively to support testing at that facility.

BLOCK B

The Block B development is the RF Signal Generation subsystem that delivers a modular, scalable EW stimulator for use in Hardware-In-The-Loop (HITL) labs, Installed Systems Test Facilities (ISTF), and Open Air Ranges (OAR). Block B develops, builds, and delivers full NEWEG systems to the ACETEF, Patuxent River, Maryland; the Electronic Combat System Evaluation Laboratory (ECSEL), Point Mugu, California; and the Benfield Anechoic Facility (BAF), Edwards AFB, California, for free-space RF radiation and direct injection into a system under test. NEWEG includes a common simulation database that all sites use and an RF generation system sized to meet individual facility specifications. The core of the EW stimulator will share the same hardware and software architectures, EW threat database interface, and simulation capabilities with the ability to support density and RF output requirements of each facility. All DoD T&E facilities will have access to common software, documents, and databases created under NEWEG.

KEY DOD PARTNERS:

- National Air and Space Intelligence Center, Wright Patterson AFB, Ohio
- Electronic Combat Stimulation Branch (ECSTIM), Patuxent River, Maryland
- Electronic Combat Simulation and Evaluation Lab, (ECSEL), Pt. Mugu, California
- Benfield Anechoic Facility (BAF), Edwards AFB, California
- Joint Preflight Integration of Munitions and Electronic Systems (J-PRIMES), Eglin AFB, Florida
- Army Threat Systems Management Office, Red Stone Arsenal, Alabama
- USRL, Eglin AFB, Florida

VERIFIED KPPS:

- Real-time execution of EWIRDB threat emitter models
- 5-8 MPPS max pulse density
- 4096 simultaneous emitters
- 50 reactive emitters
- Recorded 5 MPPS for 4 hours
- High-fidelity real-time propagation
- Multipath, ducting, antenna patterns
- Government IDD, ICD
- SSC emulator used for TC12
- Executed all Government-provided emitters
- Ability to record and play back

For further information on this exhibit, or on business opportunities with NAVAIR, please contact our Next-Generation Electronic Warfare Environment Generator Team by telephone at (301) 342-6007, by e-mail at brian.woode@navy.mil, or by mail at Next-Generation Electronic Warfare Environment Generator Team, NAVAIR, 48150 Shaw Road, Patuxent River, MD, 20670.

