E-2C SYSTEMS TEST AND EVALUATION LABORATORY

The E-2C Systems Test and Evaluation Laboratory (ESTEL) provides comprehensive test and evaluation of Airborne Early Warning (AEW) mission systems. ESTEL performs reduction, analysis, and mission reconstruction of data recorded during test flights. Analysis is conducted using ESTEL-developed programs that provide tabular and graphic representations of flight data. Mission reconstruction is performed using custom ESTEL-developed hardware/software to stimulate an E-2C Airborne Tactical Computer (ATC) and Control Indicator Group (CIG) display station. In addition to post flight data anaylsis, ESTEL actively participates in test scenarios utilizing a full UHF/HF Airborne Tactical Data System.

ESTEL Lab for E-2C AEW Test & Evaluation

Reduction of the E-2C flight data is performed using ESTEL-developed software. Flight data is reduced into databases and sorted by data types for use with ESTEL software. Data from other platforms can merge with reduced E-2C data. Final data products can be written to any media and shipped directly to the customer.

Analysis software provides track histories, mission replays, statistical outputs, and E-2C platform unique data types, in both tabular and graphical formats. The ESTEL-developed analysis software is hosted on Silicon Graphics workstations which provide a familiar Motif-based graphical user interface for all functions. By utilizing Coryphaeus, PV-Wave, and OpenGL graphics tools, flight data is displayed in two or three dimensional graphical representations. Future analysis capabilities include an Oracle database for the flight data.

Active participation in each flight test is achieved using

ESTEL's Airborne Tactical Data System (ATDS). ESTEL can receive target information from the E-2C via Link-11 and Link-4. In addition, ESTEL performs real time analysis of Link-11. Current enhancements include the integration of Joint Tactical Data Information System (JTIDS) and satellite communication Multi-Mission Advanced Tactical Terminal (MATT).

Mission reconstruction of test flights is achieved by using recorded flight data to stimulate the suite of ESTEL hardware and software. This suite includes an E-2C Airborne Tactical Computer and Control Indictor Group (CIG)

display station. Mission reconstruction provides engineers with the capability to visualize the actual test scenario recorded during each flight. Mission reconstruction, using a baseline recorded flight, can be used to compare the tracking algorithms of newer tactical tape releases against older versions, thus reducing flight test.

Aircraft instrumentation is designed, fabricated, tested, and integrated by the E-2C engineering team. ESTEL provides the ideal conditions for the development of low-cost, high quality carrier suitable instrumentation. In addition to test and evaluation performed at NAWCAD, the E-2C aircraft instrumentation team has been deployed in support of fleet operational testing.

For more information about the E2-C System Test and Evaluation Laboratory, contact the Naval Aviation Systems Team at Patuxent River, MD, at (301) 737-3751.