# Boeing Demonstrates Joint Strike Fighter Avionics

Boeing has successfully completed the second in a series of Joint Strike Fighter (JSF) avionics demonstrations for the U.S. government. The demonstrations are an important factor toward reducing risk in the development of the operational JSF, called the Preferred Weapons System Concept.

"We're developing an affordable and balanced design for avionics," said Steve Alberts, JSF avionics chief for Boeing. "Several years ago we built a plan for avionics risk reduction, and today we are exactly where we said we wanted to be."

Boeing used representative hardware and software to demonstrate real-time avionics functions and capabilities. The demonstration included target detection, communication with off-board sensors, and information management to the pilot. Boeing also demonstrated how well its architecture supports the affordable addition of new functions over time.

Using widely accepted microprocessors, which provide a more affordable solution than the specialty processors typically developed for legacy avionics systems, Boeing demonstrated that its architecture can support the needs of an advanced avionics system.

Boeing also demonstrated the improved supportability of its JSF avionics over legacy systems, which are susceptible to high life-cycle costs due to the obsolescence of rapidly evolving electronics hardware. Boeing demonstrated innovative methods for overcoming these problems and reducing the logistics footprint.

Overall, Boeing is leveraging its heritage in avionics integration, the practical use of system engineering and project management tools, and a highly capable supplier team to develop a low-risk avionics design.

Avionics development during the current concept demonstration phase of the JSF program will culminate in a series of tests using the JSF Avionics Flying Laboratory, a modified Boeing 737-200. The 737 testbed will demonstrate JSF avionics performance, including air-to-ground and air-to-air functionality, in a real-time dynamic environment. Testing in this environment will provide an early opportunity to detect targets under realistic conditions, years before the operational JSF is delivered to the customer.

While defining the operational JSF, Boeing also is building two X-32 concept demonstrators. Assembly of both X-32 aircraft is ahead of schedule and on cost. The X-32 aircraft will be used to meet three primary objectives: 1) demonstrate commonality across the variants as well as commonality of design/build processes; 2) demonstrate the Boeing concept for short takeoff/vertical landing, propulsion, hover and transition modes; and 3) demonstrate the Boeing concept for low-speed carrier approach.

Boeing is competing to build the operational JSF under a four-year joint U.S. Air Force, Navy and Marine Corps and U.K. Royal Navy and Royal Air Force-sponsored concept demonstration contract. The government is scheduled to select a winner in 2001.

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