# Boeing Delivers Updated F-22 Avionics Software

Boeing has delivered an updated F-22 avionics software package to its 757 Flying Test Bed ahead of schedule. The update includes the F-22 Raptor's final two integrated avionics sensors -- electronic warfare and communication, navigation and identification.

The delivery completes the Defense Acquisition Board's 1999 requirements for the program - milestones that had to be met before the Pentagon will consider putting the F-22 into low-rate production.

In conjunction with the delivery, Boeing completed a number of modifications to the Flying Test Bed. CNI and EW systems, including missile-launch detectors, were installed in the aircraft's cabin, on its "sensor wing" and on a special pod attached to the underside of the fuselage.

The modifications, together with the updated Block 2 software, will provide the F-22 team its first opportunity to accomplish multiple sensor fusion in an airborne environment.

"We'll now be able to take inputs from more than one sensor and process and display the information in an easy-to-use format, thereby increasing the pilot's situational awareness," said Bruce Ammerman, Boeing F-22 Avionics Integration/Test manager.

Boeing will begin flight testing the updated avionics package in the coming weeks, with emphasis on MLD performance for the first several months of testing.To date, F-22 avionics software has undergone more than 14,000 hours of rigorous testing in the company's Avionics Integration Lab and 360 hours on the Flying Test Bed. Boeing currently is testing Block 3 software in the lab.

The Flying Test Bed, a modified Boeing 757 jet, is helping reduce avionics development costs, risks and future F-22 flight test hours by enabling extensive in-flight testing, evaluation and troubleshooting before full avionics are ever installed and flown on the Raptor.

Previous modifications to the test bed include installation of an F-22 forward fuselage section to the nose of the plane, installation of a sensor wing on the plane's crown and installation of a simulated F-22 cockpit in the test bed cabin.

Boeing is teamed with Lockheed Martin and Pratt & Whitney to design and build the F-22 Raptor for the U.S. Air Force. Boeing supplies the F-22's wings, aft fuselage, radar, mission software, avionics integration and testing, as well as training and life-support systems.

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