

B-1B software upgrade to ensure future warfighting capabilities

Air-Attack



EDWARDS AIR FORCE BASE, Calif. - In order to keep the B-1B Lancer's capabilities ready to operate now and well into the fast-paced integrated battlefield of the future, the 419th Flight Test Squadron began testing Sustainment Block 16A (SB 16A) software upgrades here April 1, to work in conjunction with the long-range bomber's recently added glass cockpit configuration.

The SB 16A software is a fielding configuration that will enhance the glass cockpit introduced as part of the B-1 Integrated Battle Station (IBS) modification, increase Link 16 capabilities, and provide a leap in situational awareness for the B-1 operators. Link 16 allows all Link 16-equipped military aircraft, as well as naval and ground forces, to interact and exchange overall tactical pictures in near-real time.

"The SB 16A configuration is expected to improve situational awareness to all crew members, increase the maintainability of the B-1B, and provide data link capabilities to the field. Major software enhancements include improved integration between the B-1 offensive avionics system, various onboard sensors and the data link which results in improved battlespace awareness for both the B-1 aircrew and fellow strike package assets," said Capt. Carlos Pinedo, 419th FLTS B-1 Test Pilot and flight commander.

"The new displays allow aircrew members to seamlessly pass information and accomplish tasks that were once crew-position dependent. The overall result is improved situational awareness and a reduction in crew workload leading to improved combat effectiveness. The improved sustainability of the B-1B as a result of this program will help maintain the Air Force's long-range strike capability for many years to come."

According to Raymond So, 412th Test Engineering Group project lead engineer, the focus of the test squadron after April 1 is to identify any deficiencies as early as possible so that the customer has time to resolve issues and provide the warfighter with the best available product.

"The greatest challenge for the team [currently] is to understand the software maturity and requirements flowing into SB 16A. The new displays and interface will have such a great impact on B-1B tactics and situational awareness that the team is learning and identifying how the new aircraft will be used," added So. "This has also changed our testing philosophy. We have had to adapt our testing to the new system that we are given."

Pinedo noted that the squadron plans to test the upgrades in four phases, in which the final phase will be the configuration that the warfighter will see.

"SB 16A testing builds on and merges prior tests, which included, but are not limited to the Integrated Battle Station with the new glass cockpit design, updated Inertial Navigation Systems and the B-1B Radar Reliability and Maintainability Improvement Program," Pinedo said. "The flight and ground tests will be accomplished in four phases, each relating to a different software drop; ultimately resulting in the first operational fielding of the new cockpit design."

According to the test team, SB 16A testing is projected to end in February 2015 in which the 419th FLTS will have tested four different software phases. The last phase involves the final software going into operational test phase.