Joint Biological Stand-Off Detection System (JBSDS)

Executive Summary
- The Army Test and Evaluation Command (ATEC), with support from the Air Force Operational Test and Evaluation Center (AFOTEC), completed the multi-Service operational test.
- The Program Office has not demonstrated their proposed test and evaluation methodology that allows evaluation of the system's performance against biological warfare agents when releasing simulants in open field tests.

System
- The Joint Biological Stand-off Detection System (JBSDS) is a light detection and ranging (LIDAR)-based system that is designed to detect aerosol clouds out to 5 km in a 180-degree arc, and discriminate clouds with biological content from clouds without biological material at distances of 1 to 3 km or more. The system operates at night only, because sunlight would interfere with the ultraviolet laser signal used for discrimination and its sensors would be damaged if operated during daylight hours.
- The Air Force will employ JBSDS in semi-fixed locations. The Army will employ the system on a High-Mobility Multi-purpose Wheeled Vehicle and operate when stationary.
- Increment 1 is a limited production of 25 units to provide an interim stand-off biological detection warning.

Mission
- Commanders use biological detection information from JBSDS to support their contamination avoidance decision-making process.

- The system provides a commander with advance warning of the presence of potential biological weapon aerosol cloud hazards so the commander can implement individual and collective protective measures for assigned forces.

Prime Contractor
- SESI

Activity
- The Program Office completed JBSDS Production Verification Tests (PVT) in 2005, 2006, 2007, and September of 2008.
- ATEC, with support from AFOTEC, conducted a multi-Service operational test and evaluation in 2006. The results of this test highlighted a number of hardware and software problems. After the Program Office addressed these problems, AFOTEC conducted a second operational test in October 2007 in accordance with the DOT&E-approved test plan.
- The Program Office conducted PVT-3b in September 2008 to continue to develop their proposed test and evaluation methodology, which allows evaluation of the system's performance against biological warfare agents when releasing simulants in open field tests.

Assessment
- Although work continues, the Program Office has not yet demonstrated their proposed test and evaluation methodology. The effectiveness of the system in detecting biological warfare agents cannot be determined until this effort is completed. The suitability evaluation is ongoing.
- The system's design limits its operation to nighttime use only.
- The short stand-off distances required for detection and discrimination limit warning time, which may provide the supported commander insufficient time to respond.
- The Air Force's successful use of the wireless connectivity for partial control of the system's operation during the first operational test in 2006 prompted the Army to adopt wireless control as well. Wireless connectivity allows for simplified control and reduces the number of people required for

operation. However, each JBSDS must be turned on and off by an operator at the system.
- The system is subject to misalignment caused by road shock when used in the ground mobile system. Also, there is no built-in test capability to warn an operator that the system might be misaligned.

Recommendations
- Status of Previous Recommendations. There are no outstanding recommendations for this program.
- FY08 Recommendations. None