

# USAF Seeks New RF Decoy for B-1B

The Air Force Life Cycle Management Center, Electronic Warfare Branch (AFLCMC)/HBY) has issued a Request for Information (RFI) for a potential effort to update or replace the ALE-50 Towed Decoy System (TDS) on the B-1B bomber.

According to the RFI, the EW Branch is pursuing solutions that provide a “form-fit update that should utilize multi-band or similar capabilities to cover the frequency range currently covered by the ALE-50 plus a wider range relevant to current and emerging threats.” It adds, “Solutions should consider system integration complexity and propose efficient solutions that minimize modifications to the system while utilizing as much of existing ALE-50 infrastructure as possible.”

On the B-1B, the ALE-50 TDS includes the launcher and launch controller and it releases the Advanced Airborne Expendable Decoy (AAED), a towed RF “repeater” decoy. The ALE-50 TDS was integrated onto the B-1B in the late 1990s as an initial phase of the B-1B Defensive Systems Upgrade Program (DSUP). Part of a larger Conventional Mission Upgrade Program (CMUP) aimed at converting the B-1B from a nuclear bomber to a conventional bomber role, the DSUP, was slated to replace the B-1B’s legacy ALQ-161A EW suite with the ALR-56M radar warning receiver, the ALQ-214 RF Countermeasures (RFCM) subsystem and the ALE-50 TDS, which would deploy the ALE-55 fiber-optic towed decoy (then under development by the US Navy).

The DSUP development program kicked off in 1997 but was cancelled in 2002 due to a number of cost and schedule factors within the DSUP effort, as well as problems in the larger B-1B CMUP effort. The primary residual EW improvement from the DSUP was the earlier integration of the ALE-50 TDS. In place of the cancelled DSUP effort, the Air Force subsequently pursued an

incremental set up upgrades to the ALQ-161A suite. Significantly, this did not include provisions to enable the ALQ-161A to act as a techniques generator for the ALE-50 TDS, which essentially prevented an easy transition from the "repeater" AAED to a more advanced FOTD solution, such as the ALE-55.

The B-1B successfully used the ALE-50 in Operation Allied Force over Kosovo in 1999 and Operation Iraqi Freedom in 2003. Over the past 20 years, however, RF threat systems have become more advanced, driving the need for the B-1B program to find a more capable RF decoy solution. At the same time, the diminishing supply chain for the ALE-50 TDS, which dates back to the 1990s, has made it more difficult for the Air Force to sustain the system.

The RFI does not go into much detail about what types of decoy solutions the Air Force wants. In addition to seeking a decoy system that covers a wider range of frequencies to address modern RF threats, the Air Force wants mature decoy systems (TRL 7 or higher) for rapid development and fielding. It adds that the decoy "can be either a recoverable or expendable towed decoy or a dispensed expendable device."

In terms of potential solutions, the US Navy is migrating from the ALE-55 to a new Dual-Band Decoy (DBD) developed by BAE Systems. In addition, the US Navy is planning to procure a "free-falling" expendable RF decoy for its F-35s and F/A-18E/Fs, which is likely to be Leonardo's BriteCloud decoy. The radar cross sections of these two aircraft are smaller than the B-1B, and the suitability of these solutions will need to be evaluated in flight tests. Cost is another consideration in the decoy upgrade, as the Air Force plans to retire the last aircraft in its B-1B fleet by 2036.

The solicitation number for the RFI is FA8523-25-R-B1BDECOYUPDATE, and responses are due by June 17. The program point of contact is Ms. Medina Upshaw, e-mail

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