

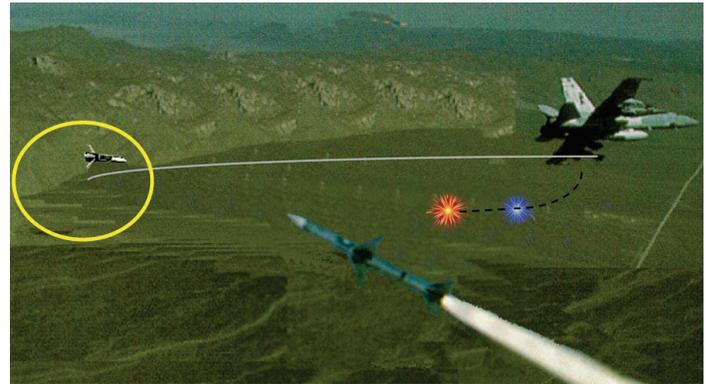
## Integrated Defensive Electronic Countermeasures (IDECM)

### Executive Summary

- In early FY08, USD(AT&L) designated Integrated Defensive Electronic Countermeasures (IDECM) as an Acquisition Category (ACAT) 1C program when it exceeded the Major Defense Acquisition Program (MDAP) threshold for Research Development Test and Evaluation costs (RDT&E).
- The Navy decertified the IDECM Block 3 (IB-3) from operational testing in FY07 pending resolution of significant reliability problems related to the decoy deployment that appeared in the FY06 IOT&E.
- The Navy flight tested corrections to mitigate the IB-3 launcher installation and decoy production issues in FY07 and confirmed they were corrected.
- IOT&E resumed in FY08 following production of a sufficient number of decoys to complete the test. DOT&E will report the results of the test in a FY09 Beyond Low-Rate Initial Production (BLRIP) report.
- A new block upgrade to IDECM, Block 4 began in FY08 to develop a lightweight repackaged onboard jammer for the F/A-18E/F and the F/A-18C/D aircraft.

### System

- The IDECM system is a radio frequency, self-protection electronic countermeasure suite on F/A-18 E/F aircraft. The system is comprised of onboard components, which receive radar signals, and employ onboard and off-board electronic jammers.
- There are four IDECM variants: Block I (IB-1), Block II (IB-2), Block III (IB-3), and Block IV (IB-4). All four variants combine an onboard radio frequency self-protection receiver and jammer installed on the F/A-18 with an expendable towed decoy that functions as an off-board self-protection radio frequency jammer.
  - IB-1 combined the legacy onboard system (ALQ-165) with the legacy (ALE-50) off-board towed decoy (fielded FY02).
  - IB-2 combined the improved onboard system (ALQ-214) with the legacy (ALE-50) off-board towed decoy (fielded FY04).



- IB-3 combines the improved onboard jammer (ALQ-214) with the new (ALE-55) off-board fiber optic towed decoy that is more integrated with the advanced onboard receiver/jammer (ALQ-214).
- IB-4 replaces the onboard jammer (ALQ-214(V)3) with a lightweight repackaged onboard jammer for the F/A-18E/F and the F/A-18C/D aircraft.

### Mission

- Combatant commanders will use IDECM to improve the survivability of Navy F/A-18 E/F strike aircraft against radio frequency guided threats while on air-to-air and air-to-ground missions.
- The warfighters use IB-3's complex off-board jamming capability to increase survivability against modern radar-guided threats.

### Prime Contractors

- ALE-55: BAE Systems
- ALQ-214: ITT

### Activity

- In early FY08, USD(AT&L) designated IDECM as an ACAT 1C program when it exceeded the MDAP threshold for RDT&E costs.
- The Navy decertified IB-3 from operational testing in FY07 pending resolution of significant reliability problems related to the decoy deployment that appeared in the FY06 IOT&E.

- The IOT&E restarted in 2QFY08; DOT&E will report results in an FY09 BLRIP report.
- The Navy completed the IB-4 Analysis of Alternatives in FY08. It supported a lightweight variant of the ALQ-214 to allow IDECM installation on F/A-18C/D aircraft, with potential for future upgrades to sophisticated countermeasure

techniques. Preparation of an updated IDECM Test and Evaluation Master Plan (TEMP) to describe the test and evaluation of this update began in late FY08.

- The Service conducted IDECM testing in FY08 in accordance with the DOT&E-approved TEMP and test plans.

## Assessment

- The Navy's IDECM IB-3 fiber optic towed decoy demonstrated improved operational effectiveness compared to the legacy ALE-50 towed decoy. Reliability during the FY08 IOT&E appears to have improved over the FY06 results, but some problems persist.
- The IB-3 IOT&E test design allows for the evaluation of operational effectiveness and suitability of the system as installed in the F/A-18E/F while performing representative missions; it will support a 2QFY09 full-rate production decision.
- Only two thirds of key threats are available for realistic testing due to the lack of test resources on open-air ranges and in hardware-in-the-loop facilities. However, the four main categories of threats will be adequately represented in development and operational testing prior to the full-rate production decision.

- The primary test resource limitation is the lack of a modern threat using a complex guidance system; which is necessary for a full quantitative assessment of the primary IB-3 key performance parameter. The approved TEMP notes this limitation. An adequate alternative method of test was used to generate a qualitative assessment.

## Recommendations

- Status of Previous Recommendations. The Navy partially addressed one of the two recommendations from FY06. The other recommendation regarding a validated end-to-end advanced radio frequency guided threat test capability remains valid.
- FY08 Recommendations.
  1. The Navy should complete an update to the IDECM TEMP describing test and evaluation of IDECM Block 4 prior to the critical design review.
  2. The Navy should update their acquisition strategy for IDECM Block-4.