

Army Integrated Air and Missile Defense (AIAMD)



In November 2023, the Army Integrated Air and Missile Defense (AIAMD) program participated in the Army's Integrated Fires Test Campaign 2023 (IFTC 23), supporting the Lower-Tier Air and Missile Defense Sensor (LTAMDS) operational assessment. In July 2024, DOT&E approved an updated annex to the program's TES that covers AIAMD participation in IFTC 24 and an FOT&E that will be conducted during IFTC 25.

SYSTEM DESCRIPTION

The AIAMD program provides an Integrated Air and Missile Defense (IAMD) Battle Command System (IBCS) to integrate Engagement Operations Centers (EOCs), Sentinel air-surveillance radars, Patriot radars, and Patriot launchers across an Integrated Fire Control Network (IFCN). The EOCs provide the operating environment for soldiers to monitor and direct sensor employment and the engagement of air threats. Hardware interface kits connect adapted Patriot and Sentinel components to the IFCN, either through an EOC or through an IFCN Relay. IFCN Relays also provide distributed operations and mobile communications nodes to extend IFCN connectivity. Future hardware and software updates will integrate additional sensors and weapons, such as LTAMDS and the Indirect Fire Protection Capability Increment 2 (IFPC Inc 2).

MISSION

Air Defense Artillery forces will use IBCS to provide the timely detection, identification, monitoring, and (if required) engagement of air threats in support of active defense of the homeland, critical assets and locations, and deployed forces.

PROGRAM

AIAMD is an Acquisition Category ID program, developing hardware using the major capability acquisition pathway and conducting agile software development using the software acquisition pathway. DOT&E published a classified IOT&E report in March 2023 to inform the program's full-rate production decision. The Army intends to integrate new and existing sensors and weapons through a series of future increments.

In July 2024, DOT&E approved the AIAMD 2024 T&E Annex. The annex covers testing of future IBCS capability updates, including participation in IFTC 24, which began in September 2024, and a dedicated FOT&E to be conducted during IFTC 25 in 3QFY25. In addition to evaluation of capability updates, the FOT&E will evaluate the correction of deficiencies discovered before and during IOT&E. The Army plans to continue to submit annual T&E annexes.

The Army is considering fielding some AIAMD components OCONUS in FY25. This may delay the schedule for IFTC 25, but will not affect the scope of the dedicated FOT&E.

» MAJOR CONTRACTORS

- Northrop Grumman Corporation – Huntsville, Alabama
- Raytheon, a subsidiary of RTX – Huntsville, Alabama and Andover, Massachusetts

- Lockheed Martin Corporation – Dallas, Texas

TEST ADEQUACY

AIAMD participated in IFTC 23, which took place in November 2023, in support of the LTAMDS operational assessment. DOT&E approved the IFTC 23 test plan and observed the testing. DOT&E determined that IFTC 23 was inadequate to support an assessment of operational effectiveness due to immature and unaccredited LTAMDS modeling and simulation (M&S) tools. AIAMD is also participating in IFTC 24 to support LTAMDS and IFPC Inc 2 operational assessments. Testing began in September 2024, in accordance with the DOT&E-approved test plan and was observed by DOT&E. IFTC 24 is planned to end in 1QFY25.

As the Army continues to integrate systems into the AIAMD architecture, the M&S tools for those sensors and weapons must also be verified, validated, and accredited to support credible assessments of operational effectiveness in realistic threat environments.

PERFORMANCE

» EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY

AIAMD started to collect additional operational test data in FY24. Performance evaluations are unchanged from DOT&E's

RECOMMENDATIONS

The Army should:

1. Complete and demonstrate the deficiency corrections recommended in DOT&E's classified IOT&E report, as recommended in the FY23 Annual Report.
2. Continue to develop an integrated suite of M&S tools to support follow-on testing of IBCS and generate the data necessary to support the verification and validation of these tools to provide operationally representative assessments of these increasingly complex IAMD systems, as recommended in the FY22 and FY23 Annual Reports.
3. Continue development of the AIAMD 2025 T&E Annex to prepare for dedicated FOT&E during IFTC 25.