Modernized Selected Acquisition Report (MSAR)

Integrated Air and Missile Defense (IAMD)

FY 2025 President Budget

Effective: December 31, 2023

Defense Acquisition Visibility Environment

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(U) Common DoD Abbreviations

$B	Billions of Dollars
$K	Thousands of Dollars
$M	Millions of Dollars
ACAT	Acquisition Category
Acq O&M	Acquisition-Related Operations and Maintenance
ADM	Acquisition Decision Memorandum
APA	Additional Performance Attribute
APB	Acquisition Program Baseline
APPN	Appropriation
APUC	Average Procurement Unit Cost
BA	Budget Authority or Budget Activity
Blk	Block
BY	Base Year
CAE	Component Acquisition Executive
CAPE	Cost Assessment and Program Evaluation
CARD	Cost Analysis Requirements Description
CCE	Component Cost Estimate
CCP	Component Cost Position
CDD	Capability Development Document
CLIN	Contract Line Item Number
CPD	Capability Production Document
CY	Calendar Year or Constant Year
DAB	Defense Acquisition Board
DAE	Defense Acquisition Executive
DAES	Defense Acquisition Executive Summary
DAVE	Defense Acquisition Visibility Environment
DoD	Department of Defense
DSN	Defense Switched Network
EMD	Engineering and Manufacturing Development
EVM	Earned Value Management
FD	Full Deployment
FDD	Full-Deployment Decision
FMS	Foreign Military Sales
FOC	Full Operational Capability
FRP	Full-Rate Production
FY	Fiscal Year
FYDP	Future Years Defense Program
ICD	Initial Capabilities Document
ICE	Independent Cost Estimate
Inc	Increment
IOC	Initial Operational Capability
IT	Information Technology
JROC	Joint Requirements Oversight Council
KPP	Key Performance Parameter
KSA	Key System Attribute

LRIP	Low-Rate Initial Production
MDA	Milestone Decision Authority
MDAP	Major Defense Acquisition Program
MILCON	Military Construction
N/A	Not Applicable
O	Objective
O&M	Operations and Maintenance
O&S	Operating and Support
ORD	Operational Requirements Document
OSD	Office of the Secretary of Defense
PAUC	Program Acquisition Unit Cost
PB	President's Budget
PE	Program Element
PEO	Program Executive Officer
PM	Program Manager
POE	Program Office Estimate
R&MF	Revolving and Management Funds
RDT&E	Research, Development, Test, and Evaluation
SAR	Selected Acquisition Report
SCP	Service Cost Position
T	Threshold
TBD	To Be Determined
TY	Then Year
U.S.	United States
U.S.C	United States Code
UCR	Unit Cost Reporting
USD(A&S)	Under Secretary of Defense (Acquisition and Sustainment)

(U) Program Description

Full Name
Integrated Air and Missile Defense

Short Name
IAMD

PNO
205

Milestone Decision Authority
Defense Acquisition Executive

Lead Component
Department of the Army

Program Executive Office
PEO Missiles & Space (M&S)

Joint Program
No

International Partners
Poland

Adaptive Acquisition Pathway
Major Capability Acquisition

Acquisition Type
Major Defense Acquisition Program

Acquisition Category
ID

Acquired Systems
IAMD

Acquisition Status
Active Acquisition

Mission
The Army Integrated Air and Missile Defense (AIAMD) program is a designated Major Defense Acquisition Program (MDAP), a critical component of the U.S. Army's Air and Missile Defense (AMD) strategy and is a top AMD Cross Functional Team modernization priority program with a significant Software Pathway element. The program is a direct response to the U.S. Army AMD Concept and Operational and Organizational Plan for the Future Force, the Army IAMD System of Systems (SoS) Capability Development Document (CDD) and the AMD Task Force Concept of Operations. The AIAMD program is uniquely structured to enable the development of an overarching SoS capability with all participating Air Defense Artillery components functioning interdependently to provide total operational capabilities not achievable by the individual element systems. The AIAMD program achieves this objective by establishing the AIAMD architecture and developing (1) the Integrated Battle Command Systems (IBCS) Engagement Operations Center (EOC) that provides the common mission command capability, (2) the Integrated Fire Control Network (IFCN) relay capability for fire control connectivity and distributed operations, and (3) the common Plug and Fight (P&F) Kits that network enable multiple sensor components, weapon components, and the IBCS EOC. The IFCN consists of the transport layer (radios) and associated software resident in the EOC, IBCS Collaborative Environment (ICE), which provides an open workspace for the collaborative work environment for AMD battalion and battery echelon staffs, the IFCN relay, and the adaptation and interface software in the P&F Adaptation Kits.
The AIAMD program provides advanced capabilities to the Army and the Soldier by allowing transformation to a network centric SoS capability that integrates AMD sensors and weapons with the IBCS EOC. The AIAMD SoS architecture enables extended range and non-line-of-sight engagements, to include joint kill chain engagements across the full spectrum of aerial threats, providing fire control quality data to the most appropriate weapon to complete the mission successfully. Further, it mitigates the coverage gaps and the single points of failure that plagued

AMD design in the past. The AIAMD program provides the user with the ability to train on a single Mission Command system that will result in overall training savings. The AIAMD program provides the Army with the ability to procure components that interface with the IFCN, alleviating the cost of procuring total system capabilities in the future.

(U) Responsible Office

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(U) Executive Summary

Program Highlights Since Last Report

Program completed Full Rate Production Review (FRP) on April 10, 2023 followed by an Acquisition Decision Memorandum (ADM) signed on June 30, 2023. The FRP Acquisition Program Baseline (APB) was signed on October 2, 2023.
The program declared Initial Operating Capability (IOC) on April 27, 2023 with 3-43 Battalion (BN) at Ft. Bliss, Texas.
Granted Army Interoperability Certification (AIC).
Granted an Interim Capability to Operation (ICTO) for Joint Interoperability Certification (JIT).
Completed Software Program Increments (PIs) 13-16.
Executed Developmental Testing to support the walk ups toward Integrated Fired Test Campaign FY 2023 (IFTC23) Lower Tier Air and Missile Defense Sensor Operational Assessment (LTAMDS OA).

(U) History of Significant Developments Since Program Inception

Date	Description
October 2023	DAE Approved Full Rate Production APB.
April 2023	FRP- Program declared Initial Operating Capability (IOC) with the 3-43 Air Defense Battalion. April 27th
April 2023	The DAE approved Full Rate Production for IAMD on April 10, 2023. An ADM was signed June 2023.
September 2021	DAE approved the IAMD Software Pathway Execution and Low Rate Initial Production Re-Characterization Acquisition Decision Memorandum (ADM). The ADM authorizes entry into the Software Acquisition Pathway Execution Phase and re-characterizes the IBCS FY 2022 quantity (26 IBCS EOCs) as LRIP versus FRP.
April 2021	The DAE approved the Army IAMD Milestone C APB.
January 2021	The DAE approved Milestone C for IAMD on January 11, 2021, which authorized entry into P&D, execution of an LRIP quantity of 19 EOCs, established the exit criteria necessary to complete LRIP, and approved entry into the Software Acquisition pathway planning phase for Army IAMD software related efforts while the remainder of the IAMD program continues to follow the Major Capability Acquisition pathway.
December 2017	In response to a Program Deviation Report submitted for Army IAMD, the DAE approved the program re-plan in an ADM, dated December 13, 2017. The ADM validated the Army Acquisition Objective of 454, approved the program to update the APB cost and schedule at Milestone C, and approved the revision of the EMD reliability exit criteria.
October 2014	DAE approved Army IAMD Change 2 APB. The schedule breach occurred as a result of resourcing priorities in the FY 2015 PB affecting only schedule.
December 2012	DAE approved the Army IAMD program restructure APB.
February 2012	Army IAMD program restructure ADM was approved. The ADM approved an Army Acquisition Objective increase from 285 to 431. The Army IAMD architecture was expanded to incorporate the brigade combat team's: Air Defense Airspace Management Cell, Air Defense Artillery Brigade, Army Air and Missile Defense Command Headquarters, Indirect Fire Protections Capability/Avenger Battalions and Componentized Patriot system. The ADM approved the program as a designated system for the Defense Exportability Feature pilot program.

Date	Description
December 2009	Army IAMD Milestone B ADM approved entry into EMD and program initiation. The Milestone B decision resulted in down select to an IAMD Battle Command System prime contractor award to Northrop Grumman.

(U) Schedule

(U) Schedule Events

Events		Full Rate Production (Current) 10/2/2023 Objective / Threshold		Current Estimate 12/31/2023	Actual
MS B	MS B	Dec 2009	Dec 2009	-	23 Dec 2009
CDR	CDR	May 2012	May 2012	-	24 May 2012
MS C	MS C	Jan 2021	Jan 2021	-	11 Jan 2021
IOT&E					
Start	IOT&E	Mar 2021	Mar 2021	-	8 Mar 2021
Complete	IOT&E	Oct 2022	Oct 2022	-	21 Oct 2022
IOC	IOC	Apr 2023	Apr 2023	-	27 Apr 2023
FRP	FRP Decision	Apr 2023	Apr 2023	-	10 Apr 2023

Notes

Schedule Baseline Deviation Explanation

None

(U) Current Significant Schedule Risks and Risks Identified at Milestones/Decisions

None

(U) Performance

(U) Performance Attributes

Net Ready		KPP
Current Estimate **12/31/2023**		Meets objective with limitations until full Joint Interoperability Testing (JIT) certification is received. Army IAMD demonstrated significant high-level Link 16 (L16) capabilities within Program Increment (PI)-7.4e and PI-10.4, which will be used to request an Interim Certificate to Operate (ICTO) on Joint networks. The Agile development cycle supports continued L16 maturation in subsequent Program Increments to ensure Service Level and Joint certification. Army IAMD SoS shall meet the requirements for supporting military operations, entering, and being managed on networks, and effectively exchanging information as specified in the AIAMD Increment 2 CDD-U NR Attributes Table 5.2.3. Army IAMD developed systems/sub- systems shall enter and exit the networks without interrupting, disrupting nor degrading overall network capability or interrupting nor disrupting Air and Missile Defense operations.
Demonstrated Performance **10/21/2022**		During IOT&E, IAMD has demonstrated capabilities to exchange Integrated Broadcast System (IBS), Blue Force Tracker (BFT), US Message Text Format (USMTF), and L16 data; however, limitations exist. Continuous PI testing at the GSIL and WSMR provides incremental datapoint to assess maturity through the Agile process. The limitations identified are mainly related to standards non-compliance for reporting on the specific interfaces rather than operational capability. Integration of IBS data within the system was demonstrated during Phase 1 of IOT&E. PI 10 Initial Service Level Testing (SLT) is complete and limitations identified. IBCS v4.6.2 has been granted an initial Interim Certificate to Operate (ICTO) by the Department of Defense Interoperability Steering Group Chairman based on the continuing requirement to operate this system and satisfactory progress toward joint interoperability certification. Army IAMD demonstrated high-level USMTF receipt processing capabilities, as described below. - Upon an external Air and Missile Defense Workstation (AMDWS) transmitting the ADA-05 USMTF Air Tasking Order and USMTF Airspace Control Order to the Army IAMD participant, the Army IAMD Fire Control workstation provided an indication that the USMTF files arrived. - The Army IAMD Fire Control workstation alert Graphical User Interface (GUI) indicated: - Arrival of USMTF Air Tasking Order (ATO) - Arrival of USMTF Air Combat Order (ACO) - The Army IAMD Fire Control Workstation Integrated Defense Design (IDD) File Manager indicated ACO file present and ATO file present.
Full Rate Production (Current)	**Objective**	(T=O) Army IAMD SoS shall meet the requirements for supporting military operations, entering and being managed on networks, and effectively exchanging information as specified in the NR Attributes Table 5.2.3.

		Army IAMD developed systems/sub-systems shall enter and exit the networks without interrupting, disrupting nor degrading overall network capability or interrupting nor disrupting AMD operations.
10/2/2023	**Threshold**	Army IAMD SoS shall meet the requirements for supporting military operations, entering and being managed on networks, and effectively exchanging information as specified in the NR Attributes Table 5.2.3. Army IAMD developed systems/sub-systems shall enter and exit the networks without interrupting, disrupting nor degrading overall network capability or interrupting nor disrupting AMD operations.
Integrated Defense Effectiveness		**KPP**
Current Estimate **12/31/2023**		Meets objective with limitations. (1) To support attainment of a commander's defense effectiveness objectives, which would normally range from 0.5 to 0.99, shall provide flexible interceptor selection and firing doctrine within the Task Force. (2) Shall enable defeat of non- ballistic and ballistic platforms at times and locations not otherwise available to the commander without an integrated operations capability by utilizing fused and/or composite organic and non- organic sensor data from multiple sensors to execute engagements (e.g., single/multiple/simultaneous) up to the operationally effective range of selected missile kinematics. (3) Shall be capable of allowing greater defense effectiveness for high- priority assets while increasing defense effectiveness to full 360-degree coverage against attacking non-ballistic threats. (4) ASoS Defense effectiveness levels shall not degrade and will remain equal to or greater than the effectiveness levels of fielded BM and CM/ABT defense systems.
Demonstrated Performance **10/21/2022**		IAMD provides flexible interceptor selection and fire doctrine via the Integrated Defense Designer. There are a few limitations with the firing doctrine, not being able to change the "Computed Method of Fire (MOF)" during execution, and not being able to define a separate MOF for pop-up targets. IAMD defeats non-ballistic and ballistic platforms at times and locations not otherwise available to the commander with some limitations. IBCS is able to perform engage-on-net for non-ballistic targets. Longer than desired reaction times occur when sensor track disclosure to IBCS is later in time for a target resulting in engagements falling below/inside keep-out. IBCS continues to improve classification and sub-classification of targets (Air to Surface Missile especially) which is a cause for some failed engagements. IBCS does not use non-organic sensor track data for PAC-2 Tactical Ballistic Missiles (TBMs) engagements. IAMD is capable of increasing defense effectiveness to full 360-degree coverage against attacking non-ballistic threats. During the 2022 IOT&E event, IBCS demonstrated that it had the capability to defend a near 360-degree coverage against attacking non-ballistic threats to the extent of given sensor and weapon abilities. Defense effectiveness is degraded for selected threats when compared to non-

		IAMD enabled legacy performance. This degradation is primarily driven by increased reaction time for high-speed threats. IBCS effectiveness against Non-Separating TBMs and ABTs is consistent with legacy systems. However, IBCS engages Separating TBMs at lower altitudes than legacy systems, and occasionally engages the booster of these targets because of restrictions in redirecting Interceptors within the legacy capabilities. During IOT&E, AIAMD demonstrated ability: to perform engagements at times and places not available to current force systems (Extended Battlespace and Continuous planning as it traverses field of view of different radars; to plan and execute engagements at full kinematic ranges of multiple interceptor types; to generate a single integrated air picture with multiple partners within the bounds of the test; to plan and execute engagements across all threat types presented during IOT&E; to exchange limited Link-16 data. During IOT&E, the following defects were identified that contributed to the IDE limitations: engagement planning, erroneous Identification Friend or Foe, ARM classification, TBM Outs/Booster, and Common Warfighter Machine Interface useability. ATEC and DOT&E support the PM Get-well Plan to verify fixes in Follow On Test and Evaluation (FOT&E) with future Program Increments.
Full Rate Production (Current)	**Objective**	(1) (T=O) To support attainment of a commander's defense effectiveness objectives, which would normally range from 0.5 to 0.99, shall provide flexible interceptor selection and firing doctrine within the Task Force. (2) (T=O) Shall enable defeat of non-ballistic and ballistic platforms at times and locations not otherwise available to the commander without an integrated operations capability by utilizing fused and/or composite organic and non-organic sensor data from multiple sensors to execute engagements (e.g., single/multiple/simultaneous) up to the operationally effective range of selected missile kinematics. (3) (T=O) Shall be capable of allowing greater defense effectiveness for high-priority assets while increasing defense effectiveness to full 360-degree coverage against attacking non-ballistic threats. (4) (T=O) ASoS Defense effectiveness levels shall not degrade and will remain equal to or greater than the effectiveness levels of fielded BM and CM/ABT defense systems.
10/2/2023	**Threshold**	(1) To support attainment of a commander's defense effectiveness objectives, which would normally range from 0.5 to 0.99, shall provide flexible interceptor selection and firing doctrine within the Task Force. (2) Shall enable defeat of non-ballistic and ballistic platforms at times and locations not otherwise available to the commander without an integrated operations capability by utilizing fused and/or composite organic and non-organic sensor data from multiple sensors to execute engagements (e.g., single/multiple/simultaneous) up to the operationally effective range of selected missile kinematics. (3) Shall be capable of allowing greater defense effectiveness for high-priority assets while increasing defense effectiveness to full 360-degree

		coverage against attacking non-ballistic threats. (4) ASoS Defense effectiveness levels shall not degrade and will remain equal to or greater than the effectiveness levels of fielded BM and CM/ABT defense systems.
Force Protection		**KPP**
Current Estimate **12/31/2023**		Will meet threshold with limitations. (1) Shall be designed to be operated by Soldiers wearing body armor and equipped with appropriate weapons. (2) Shall have situational awareness and understanding commensurate with the supported force. (3) Shall report the position and ID of all IAMD assets into the COP and JBC-P/BFT2 nets. (4) Shall be operable by Soldiers in MOPP 4. (5) Vehicle cabs shall be capable of adding up-armor protection IAW the approved Family of Medium Tactical Vehicles CPD.
Demonstrated Performance **10/21/2022**		Tank-automotive and Armaments Command (TACOM) Memorandum for Record confirming Up Armor cabs support small arms protection. System contains BFT radios to support BFT Nets. Human Systems Integration (HSI) assessment during LUT and IOT&E showed system could be operated by the soldiers wearing body armor. System does not support manned rigid wall shelters; therefore, requirement is not applicable.
Full Rate Production (Current)	**Objective**	(1) (T=O) Shall be designed to be operated by Soldiers wearing body armor and equipped with appropriate weapons. (2) (T=O) Shall have situational awareness and understanding commensurate with the supported force. (3) (T=O) Shall report the position and ID of all IAMD assets into the COP and JBC-P/BFT2 nets. (4) (T=O) Shall be operable by Soldiers in MOPP 4. (5) (T=O) Vehicle cabs shall be capable of adding up-armor protection IAW the approved Family of Medium Tactical Vehicles CPD. (6) Manned rigid walled shelters incorporated into Army IAMD developed systems/sub-systems shall provide an active overpressure system and air filtration system to prevent contamination during a CBRN event that is sustainable through decontamination. (7) Manned rigid walled shelters shall be capable of adding up-armor protection sufficient to repel enemy small arms as developed by the responsible program manager.
10/2/2023	**Threshold**	(1) Shall be designed to be operated by Soldiers wearing body armor and equipped with appropriate weapons. (2) Shall have situational awareness and understanding commensurate with the supported force. (3) Shall report the position and ID of all IAMD assets into the COP and JBC-P/BFT2 nets. (4) Shall be operable by Soldiers in MOPP 4. (5) Vehicle cabs shall be capable of adding up-armor protection IAW the approved Family of Medium Tactical Vehicles CPD.
System Survivability (KPP)		
System Survivability: Cyber Survivability		**APA**
Current Estimate **12/31/2023**		Meets threshold with limitations. (1) Army IAMD Inc 2 systems shall be capable of operations in MT-3, Operational Tactical - 72 hours. (2) Reference System Survivability KPP in Table 5.3 KPP/KSA/Other Attributes

	Rollup for Cyber Survivability Attribute identification.
Demonstrated Performance 10/21/2022	Multiple cyber-test events have been performed and proven several findings from the 2021 Cooperative Vulnerability and Penetration Assessment (CVPA)/ Adversarial Assessment (AA) have been remediated or mitigated. A Cyber-Risk Reduction (CRR) test event was held in April 2022 on PI-10 to conduct an initial review of fixes of vulnerabilities listed in the 2021 CVPA and AA reports, find additional vulnerabilities, and provide a preview of the cyber posture of the system going into IOT&E Phase 2. A Verification of Fixes (VoF) was held in September 2022 at the start of IOT&E Phase 2. The VoF successfully demonstrated significant reduction of risk to the system through cybersecurity solution implementation in each PI, prioritizing fixes for the most critical findings. Many of the remaining findings from CVPA, AA, and VoF events will be remediated through new hardware introduced in the LRIP baseline. A CRR is planned for the new hardware configuration and PI-17 software in April 2024 to verify fixes and assess the system for new vulnerabilities. Ongoing cyber testing is executed after each PI to ensure improvements are implemented, verified, and new vulnerabilities are found early in the development processes. Continued development of PEO Missiles and Space (MS) Cybersecurity Resiliency System (CRS) integrated tool suite with a targeted integration into the IBCS baseline after IOC. The CRS tool suite, which will include a Commercial Off-the-Shelf (COTS) Security Information Event Manager (SIEM) solution, is expected to increase cyber visibility and analytic capabilities into the system. A protection measure for critical interfaces was tested at the last PEO MS Survivability and Resiliency Exercise (SuReX) in July 2022 and is expected to be implemented into the PI-17 baseline. The IBCS Cyber Agile team continues to prioritize vulnerabilities, mitigations, and fixes while providing a cyber-focal point to the system development process. The critical enabler for the AIAMD Program is IBCS software development and qualification testing. The 2018 National Defense Authorization Act (NDAA) Section 873 selected the IFMC PO to implement an Agile or Iterative Development Methods Pilot Program and OSD designated AIAMD as the Army's only DevSecOps Pathfinder program. AIAMD employs the Scaled Agile Framework (SAFe), which is a knowledge base of proven, integrated principles, practices, and competencies for Lean, Agile and DevOps. SAFe uses multiple Program Increments for release of new capabilities. SAFe is a scalable and configurable framework that helps organizations deliver new products, services, and solutions in the shortest sustainable lead-time. SAFe guides the roles, responsibilities, and activities necessary to achieve a sustained, competitive technological advantage. The IFMC PO leverages Agile processes to prioritize and implement cybersecurity engineering, testing, and fixes for the IBCS system.

Full Rate Production (Current) **10/2/2023**	**Objective**	(1) Army IAMD Inc 2 systems shall be capable of operations in: CSRC 4-High; MT-3, Operational Tactical - 72 hours; CDL 4-Extreme; IL 3- Serious Adverse Effect. (2) Reference System Survivability KPP in Table 5.3 KPP/ KSA/Other Attributes Rollup for Cyber Survivability Attribute identification.
	Threshold	(1) Army IAMD Inc 2 systems shall be capable of operations in MT-3, Operational Tactical - 72 hours. (2) Reference System Survivability KPP in Table 5.3 KPP/ KSA/Other Attributes Rollup for Cyber Survivability Attribute identification.

System Survivability: Electronic Protection, CBRN, and Assured PNT	**APA**
Current Estimate **12/31/2023**	(1) Meets with limitations. (T=O) Electronic protect solutions shall reduce/eliminate the effects of enemy electronic attack to preserve the ability to pass data within requisite timelines to support EO and FO requirements. (2) (T=O) Shall return to full mission capability within 30 minutes of decontamination procedures after a CBRN attack. (3) (T=O) Shall survive five cycles of contamination/decontamination within a 30-day period with no more than 20% degradation in function. (4) (T=O) Shall be capable of decontamination to negligible risk levels; the thorough decontamination process will take no longer than 75 minutes. (5) (T=O) Shall survive and meet performance after exposure to electromagnetic environmental effects (E3) (e.g., direct/ indirect lighting strike, HEMP, etc.) as addressed in MIL-STD-464C/MIL-STD2169. (6) Manned rigid wall shelter shall withstand the initial nuclear weapons effects of blast, thermal radiation, and initial nuclear radiation to the same level where critical task operators remain combat-effective long enough to execute the mission and IAW prescribed criteria levels in NATO STANAG 4145. (7) Assured PNT shall be capable of operating in level 2 conditions. (8) The PNT capabilities employed by the system must maintain tactical resiliency and continue to provide trusted PNT information at the level of accuracy required by the mission in the expected physical, electromagnetic environments.
Demonstrated Performance **10/21/2022**	Assured PNT M-code integration scheduled for LRIP. Electronic Protection (EP) capabilities have been demonstrated to have capability against specific threats during PEO MS dedicated Cyber and Electromagnetic Activities (CEMA) Events, during the Limited User Test, IOT&E, and during Developmental and Flight Tests. Improvements to EP are addressed in future builds through updates to tracking software, sensor capabilities, and through the integration of improved Integrated Fire Control Network (IFCN) radio hardware. As the threat evolves, system enhancements will be allocated to address the threat. IBCS incorporates active overpressure in EOC shelters for CBRN contamination minimization. IBCS Environmental Qualification Testing showed the system has shortfalls on the decontamination process - issue to be addressed in future Engineering Change Proposals.

Full Rate Production (Current)	**Objective**	(1) (T=O) Electronic protect solutions shall reduce/ eliminate the effects of enemy electronic attack to preserve the ability to pass data within requisite timelines to support EO and FO requirements. (2) (T=O) Shall return to full mission capability within 30 minutes of decontamination procedures after a CBRN attack. (3) (T=O) Shall survive five cycles of contamination/ decontamination within a 30-day period with no more than 20% degradation in function. (4) (T=O) Shall be capable of decontamination to negligible risk levels; the thorough decontamination process will take no longer than 75 minutes. (5) (T=O) Shall survive and meet performance after exposure to electromagnetic environmental effects (E3) (e.g., direct/indirect lighting strike, HEMP, etc.) as addressed in MIL-STD-464C/MIL-STD2169. (6) Manned rigid wall shelter shall withstand the initial nuclear weapons effects of blast, thermal radiation, and initial nuclear radiation to the same level where critical task operators remain combat-effective long enough to execute the mission and IAW prescribed criteria levels in NATO STANAG 4145. (7) Assured PNT shall be capable of operating in level 2 conditions. (8) The PNT capabilities employed by the system must maintain tactical resiliency and continue to provide trusted PNT information at the level of accuracy required by the mission in the expected physical, electromagnetic environments.
10/2/2023	**Threshold**	(1) Electronic protect solutions shall reduce/eliminate the effects of enemy electronic attack to preserve the ability to pass data within requisite timelines to support EO and FO requirements. (2) Shall return to full mission capability within 30 minutes of decontamination procedures after a CBRN attack. (3) Shall survive five cycles of contamination/decontamination within a 30-day period with no more than 20% degradation in function. (4) Shall be capable of decontamination to negligible risk levels; the thorough decontamination process will take no longer than 75 minutes. (5) Shall survive and meet performance after exposure to electromagnetic environmental effects (E3) (e.g., direct/indirect lighting strike, HEMP, etc.) as addressed in MIL-STD-464C/MIL-STD2169. (6) No threshold (7) No Threshold (8) The PNT capabilities employed by the system must maintain tactical resiliency and continue to provide trusted PNT information at the level of accuracy required by the mission in the expected physical, electromagnetic environments.
Sustainment (KPP)		
Sustainment: Operational Availability		**APA**
Current Estimate 12/31/2023		Exceeded Operational Availability KPP threshold. Program meets threshold of “Army IAMD developed systems/sub-systems shall achieve an Ao of at least 95%”. Reliability KSA assessed slightly below threshold.
Demonstrated Performance 10/21/2022		IAMD performance demonstrated during IOT&E Phase 2. Reliability (probability of operating for 72 hours without system abort) is estimated at 88% and Operational Availability (Ao) is estimated at 98%.

Full Rate Production (Current) 10/2/2023	**Objective**	Army IAMD developed systems/sub-systems shall achieve an Ao of at least 99%
	Threshold	Army IAMD developed systems/sub-systems shall achieve an Ao of at least 95%.
Sustainment: Materiel Availability		**APA**
Current Estimate 12/31/2023		Army IAMD developed systems/sub-systems shall achieve an Am greater than 90%.
Demonstrated Performance 2/28/2023		The Materiel Availability (Am) preliminary assessment via simulation is estimated at 94%.
Full Rate Production (Current) 10/2/2023	**Objective**	(T=O) Army IAMD developed systems/sub-systems shall achieve an Am greater than 90%.
	Threshold	Army IAMD developed systems/sub-systems shall achieve an Am greater than 90%.
Common AMD Command and Control		**KPP**
Current Estimate 12/31/2023		Meets threshold with limitations. (1) IBCS subsystems (AAMDC and Below) shall incorporate common functionality (EO/FO), that includes track management, engagement planning, engagement decision, engagement monitoring, defense planning, defense design, warfighter-machine interface, battle monitor and control, network interface and management, and staff functions. (2) Shall provide interoperability via Link- 16, enabling integration, which provides situational awareness for non-Army IAMD enabled systems. (3) No Threshold (4) Shall provide playback/recoverable data of operator's functions (e.g., display configuration) used during engagement execution. (5) Shall provide interoperability through Link-16 with current upper tier level system(s).
Demonstrated Performance 10/21/2022		IAMD includes common functionality across IBCS components within a Task Force. Hardware and software are common throughout all IBCS MEIs within the Battalion; however, some views are only available at specific workstations (i.e., the Fires Gateway). IBCS uses a common IFCN to maintain common air pictures. However, there are issues with inconsistent track pictures between IBCS components, especially during disrupted or heavily loaded network conditions. Improvements to track picture consistency will continue through the Agile Software process as there were some Common Warfighter Machine Interface useability defects identified during IOT&E. The incorporation of the new radio will improve consistency in the track picture during a contested environment. IAMD provides backward compatibility to legacy systems through the use of Link-16 networks. IAMD provides limited operator playback/recoverable data of operator functions via offline processing. Improvements to the playback/ recoverable data are planned in future PIs.
Full Rate Production (Current)	**Objective**	(1) IBCS subsystems (AAMDC and Below) shall incorporate common functionality (EO/FO), that includes: track management, engagement planning, engagement decision, engagement monitoring, defense planning, defense design, warfighter-machine interface, battle monitor and control, network interface and management,

		and staff functions, executing on the same network. (2) (T=O) Shall provide interoperability via Link-16, enabling integration which provides situational awareness for non-Army IAMD enabled systems. (3) Shall provide Link-16 at enhanced update rates via MIL-STD-3011. (4) (T=O) Shall provide playback/recoverable data of operator's functions (e.g., display configuration) used during engagement execution. (5) Shall provide interoperability through Link-16, IFCN with current upper tier level system(s).
10/2/2023	**Threshold**	(1) IBCS subsystems (AAMDC and Below) shall incorporate common functionality (EO/FO), that includes: track management, engagement planning, engagement decision, engagement monitoring, defense planning, defense design, warfighter-machine interface, battle monitor and control, network interface and management, and staff functions. (2) Shall provide interoperability via Link-16, enabling integration which provides situational awareness for non-Army IAMD enabled systems. (3) No Threshold (4) Shall provide playback/recoverable data of operator's functions (e.g., display configuration) used during engagement execution. (5) Shall provide interoperability through Link-16 with current upper tier level system(s).

(U) Requirement Source:
Sponsor(s): United States Army

1. Capability Development Document*, Army IAMD System of Systems Increment 2 CDD Update*
   Validated By: Joint Requirements Oversight Council, December 14, 2020

Notes

None

Performance Deviation Explanation

None

(U) Acquisition Budget Estimate

(U) Total Acquisition Estimates and Quantities

Category ($M) Base Year: 2023	Full Rate Production (Current) 10/2/2023 CY$ obs Objective / Threshold		Current Estimate PB 2025 CY$ obs / TY$ obs	
RDT&E	6,154.0	6,769.4	6,817.3*	6,496.3
Procurement	5,786.7	6,365.4	5,757.4	6,594.8
MILCON	0.0	0.0	0.0	0.0
O&M	126.9	139.6	128.1	139.1
R&MF	0.0	0.0	0.0	0.0
Total Acquisition	12,067.6	-	12,702.8	13,230.2
Program Acquisition Unit Cost	23.616	25.978	24.859	25.891
Average Procurement Unit Cost	11.907	13.098	11.847	13.570
Program End-Item Quantity				
Development	25		25	
Procurement	486		486	
O&M-Acquired	-		-	

* Baseline Deviation

Budget Notes

Defense Acquisition Executive approved Current APB on October 2, 2023. Program completed Full Rate Production Decision Review (FRP DR) on April 10, 2023 followed by an Acquisition Decision Memorandum signed on June 30, 2023. The FRP Acquisition Program Baseline APB was signed on October 2, 2023. The program is currently executing under the newly approved baseline.

Quantity Notes

The Army IAMD unit of measure is the EOC. The development quantity is 25 fully configured prototype RDT&E EOCs, and the procurement quantity is 486 EOCs, which enable system of systems operation of Army Air and Missile Defense Units.

Cost Baseline Deviation Explanation

Parameter	Explanation
Acquisition Cost (RDT&E)	The AIAMD RDTE deviation is a result of additional funding related to software development, 1-N capabilities, Special Access Program development, and Theater High Altitude Air Defense (THAAD) Integration effort.

(U) Risk and Sensitivity Analysis

Current Procurement Estimate Risks (12/31/2023)	
1	The hardware production configurations are largely assemblages of commercial computer processing, networking, and communications off-the-shelf commercial products. There is frequent component obsolescence requiring the identification, procurement, integration, and testing of replacements. The April 2023 Army Cost Position and Independent Cost Estimate include estimation of this recurring obsolescence issue.
Current Baseline Risks (10/2/2023)	
None	
Original Baseline Risks (6/28/2010)	
The risk confidence level for this program is difficult to quantify. Since the IAMD program is still in the source selection process the program office developed a “generic” Government program description in the CARD. It is “generic” in the sense that it is not based on the content of the proposals submitted by the bidding contractors. The SCP is, therefore, based on the CARD and not on the specific programs the contractors plan to execute. Through the Cost Review Board (CRB) process, the Army significantly reduced the risk in the Government program described in the CARD. The program office significantly reduced the scope of work they intend to have the winning contractor execute. The system will still provide all required capabilities, however, IAMD will be less integrated than originally planned. The SCP reduces the amount of software development concurrency by increasing the number of software builds from two builds to three builds and extends the development schedule by 20 months. Additionally, the SCP uses software development productivity factors based on analogous systems including systems identified by the bidding contractors.	

(U) Unit Costs

(U) Current Estimate Compared with Current Baseline

Category (CY$M) Base Year: 2023	Current Baseline 10/02/2023	Current Estimate PB 2025	% Change
Program Acquisition Unit Cost			
Acquisition Cost	12,067.6	12,702.8	
Program Quantity	511	511	
PAUC	23.616	24.859	5.26%
Average Procurement Unit Cost			
Procurement Cost	5,786.7	5,757.4	
Procurement Quantity	486	486	
APUC	11.907	11.847	-0.51%

(U) Current Estimate Compared with Original Baseline

Category (CY$M) Base Year: 2009	Original Baseline 06/28/2010	Current Estimate PB 2025	% Change
Program Acquisition Unit Cost			
Acquisition Cost	4,806.8	9,290.9	
Program Quantity	296	511	
PAUC	16.239	18.182	11.97%
Average Procurement Unit Cost			
Procurement Cost	3,316.0	4,211.0	
Procurement Quantity	285	486	
APUC	11.635	8.665	-25.53%

The Current Estimate's constant-year dollars have been converted from Base Year 2023 to Base Year 2009 using the National Defense Budget Estimates for FY 2020 (Green Book).

(U) Cost Growth Details

Impacts of Schedule Changes on Unit Cost

None

Impacts of Performance Changes on Unit Cost

None

Actions taken or Proposed to Control Future Cost Growth

None

Status of Each Major Contract and Significant Factors Contributing to Cost and Schedule Variance; Projected Effects on Future Program Costs

See Contracts section.

Notes

None

(U) Life-Cycle Costs

(U) Operating and Support and Disposal Cost Estimates Compared with Baseline

Category ($M) Base Year: 2023	Full Rate Production (Current) 10/2/2023 CY$ obs Objective / Threshold		Current Estimate CY$ obs / TY$ obs	
Total O&S	14,532.1	15,985.3	14,532.2	22,934.4
Total Disposal	30.7	-	35.8	-

(U) Current Cost Estimate Sources

Operating and Support Cost
Type: Independent Cost Estimate
Approved by: OSD Cost Assessment & Program Evaluation, April 10, 2023
Note: OSD CAPE ICE

Disposal/Demilitarization Cost
Type: No estimate. To Be Determined

Operating and Support Baseline Deviation Explanation

None

Cost Notes

Total O&S shown for the Full Rate Production Proposed Then-Year and Base-Year Objective amounts include military- and O&M-appropriation funded O&S costs for soldier operator and maintainer manpower as estimated in the FRP OSD CA Independent Cost Estimate, based on the military manpower requirements provided in the Full Rate Production Cost Analysis Requirements Description (CARD). Soldier operators and maintainers of IBCS-specific fielded systems are or will be positioned within current or planned Air & Missile Defense force structures who are equipped by multiple acquisition programs of record to create the System of Systems AMD capability. The soldier costs for operating and maintaining IBCS-specific systems in these AMD force structures will be estimated for and reviewed in future Operation and Sustainment Reviews of the IAMD program and should not be included in the O&S estimates for other acquisition programs (e.g., sensor and "shooter" systems) who also equip AMD units.
Disposal Cost is not included in the Operating and Support Cost of the current APB objective and threshold for this program.
The prior estimate did not include Military Pay due to the assumption that Military Pay was not a cost that was borne directly by the Army IAMD program. The current estimate now includes Military Pay associated with AIAMD operators and maintainers.

(U) Operating and Support Variance with Prior Estimate

(CY$M) Base Year: 2023	Estimate	
Prior Estimate (12/31/2022)	4,381.3	
Current Estimate	14,532.2	
Category	**Variance**	**Explanation**
Unit-Level Manpower	7,155.0	The prior estimate did not include Military Pay due to the assumption that Military Pay was not a cost that was borne directly by the Army IAMD program. The current estimate now includes Military Pay associated with AIAMD operators and maintainers.
Unit Operations	23.2	Soldier operators and maintainers of IBCS-specific fielded systems are or will be positioned within current or planned Air & Missile Defense force structures who are equipped by multiple acquisition programs of record to create the System of Systems AMD capability. The soldier costs for operating and maintaining IBCS-specific systems in these AMD force structures will be estimated for and reviewed in future Operation and Sustainment Reviews of the IAMD program and should not be included in the O&S estimates for other acquisition programs (e.g., sensor and "shooter" systems) who also equip AMD units.
Maintenance	227.3	Soldier operators and maintainers of IBCS-specific fielded systems are or will be positioned within current or planned Air & Missile Defense force structures who are equipped by multiple acquisition programs of record to create the System of Systems AMD capability. The soldier costs for operating and maintaining IBCS-specific systems in these AMD force structures will be estimated for and reviewed in future Operation and Sustainment Reviews of the IAMD program and should not be included in the O&S estimates for other acquisition programs (e.g., sensor and "shooter" systems) who also equip AMD units.
Sustaining Support	1,682.7	Soldier operators and maintainers of IBCS-specific fielded systems are or will be positioned within current or planned Air & Missile Defense force structures who are equipped by multiple acquisition programs of record to create the System of Systems AMD capability. The soldier costs for operating and maintaining IBCS-specific systems in these AMD force structures will be estimated for and reviewed in future Operation and Sustainment Reviews of the IAMD program and should not be included in the O&S estimates for other acquisition programs (e.g., sensor and "shooter" systems) who also equip AMD units.
Continuing System Improvements	1,062.7	Integration of new sensor and "shooter" systems across the DOD will drive increasing sustainment costs for each system integrated.
Other	0.0	
Not Categorized	0.0	

(U) Operating and Support Cost Element Structure Estimates by Acquired System

(CY$M) Base Year: 2023							
System	Unit-Level Manpower	Unit Operations	Maintenance	Sustaining Support	Continuing System Improvements	Other	Total
IAMD	7,453.2	286.1	1,481.3	3,412.6	1,899.0	-	**14,532.2**
Program	**7,453.2**	**286.1**	**1,481.3**	**3,412.6**	**1,899.0**	**-**	**14,532.2**

(U) Annual Operating and Support Costs per Unit Compared with Antecedent System

(CY$M) Base Year: 2023							
System	Unit-Level Manpower	Unit Operations	Maintenance	Sustaining Support	Continuing System Improvements	Other	Total
IAMD	0.8	0.0	0.2	0.4	0.2	-	**1.5**

(U) Operating and Support Cost Estimate Assumptions

System	Quantity to Sustain	Unit Expected Service Life (Years)	Unit of Measure	Fiscal Years Operational
IAMD	486	20.0	EOC	2023 - 2060

Additional O&S Estimate Assumptions

None

Antecedent Estimate Assumptions

No antecedent system

O&S Annual Cost Calculation Memo

None

(U) Technologies and Systems Engineering

(U) Current Significant Technical Risks and Risks Identified at Milestones/Decisions

Event	Date	Description
Current	9/26/2023	Risk 1873 - System Effectiveness: This risk is assessed as high. IF the system failure modes identified in the IOT&E Operational Evaluation Report (OER) are not corrected, THEN the system will be assessed as and readied for technology insertion by 3rd QTR 2022, THEN the program will not have a procurable mesh radio available for EOC and IFCN Relay and will be unable to integrate LTAMDS into the IBCS architecture.
Current	9/26/2023	Risk 1795 - 1st BN New Equipment Training (NET) safety release and training package: This risk is assessed as high. IF safety release and Training Package are not available by June of 2024, THEN NET will be delayed and directly impact other program milestones to include FOT&E and LRIP Material Release.
Current	9/26/2023	Risk 1874 - Initial LRIP MEI Deliveries: This risk is assessed as moderate. IF IBCS HW are not delivered on schedule, THEN qualification testing, safety release, materiel release, and NET will be delayed and miss required fielding dates.

(U) Performing Activities and Contracts

(U) External Government Activities

None

(U) Contracts and Efforts

Contract Title	Contract Number / Effort	Contractor	Phase
Agile Software Development	47QTCK-18-D-0011	PERATON INC.	Development
IBCS Adapted Launcher IDIQ TO 5	W31P4Q-19-D-0016	Lockheed Martin (LM) Missiles and Fire Control	Development
IBCS LRIP/FRP DO 1	W31P4Q-22-D-0004	NORTHROP GRUMMAN SYSTEMS CORPORATION	Production

(U) Contract and Effort Identification, Price, Quantity and Performance

Contract Number:	47QTCK-18-D-0011	**Order Number:**	W31P4Q-22-F-0120
Contract Title:	Agile Software Development	**Strategy:**	FAR 16.5: Indefinite Delivery Definite Quantity
CAGE:	0HD54 - PERATON INC.	**Contracting Office:**	ACC - Army Contracting Command
City, State/Province:	Herndon, VA		
Effort Number:	-	**Supported Phase:**	Development
Type:	Firm-Fixed-Price Level of Effort Term	**Award Date:**	April 14, 2023
Latest Modification Date:	August 15, 2023	**Definitization Date:**	March 27, 2023
Latest Modification No.:	PZ0002	**Work Start Date:**	April 14, 2022
Technical Data Rights:	Unlimited Rights		
Notes:	This contract provides Agile software development capability to deliver continued software-based improvements and capability enhancement to its Air and Missile Defense (AMD) integration network that supports various Army systems. The development of this network is being conducted in an Agile methodology using a Scaled Agile Framework (SAFe). This contract was awarded on April 14, 2022, with a not to exceed amount of $118.2M. Negotiations for definitization started November 2022. Definitization occurred on March 27, 2023 with a final amount of $115.3M.		

Initial Price (TY$M) Target / Ceiling		Current Price (TY$M) Target / Ceiling		Estimate at Completion (TY$M) Contractor / PM		Initial Quantity	Current Quantity	Delivered Quantity
-	118.2	-	115.3	-	-	-	-	-

(U) Contract and Effort Identification, Price, Quantity and Performance

Contract Number:	W31P4Q-19-D-0016	**Order Number:**	W31P4Q-23-F-0084
Contract Title:	IBCS Adapted Launcher IDIQ TO 5	**Strategy:**	FAR 15: Negotiated Contracts

CAGE:	64059 - Lockheed Martin (LM) Missiles and Fire Control	**Contracting Office:**	ACC - Army Contracting Command
City, State/Province:	Grand Prairie, TX		
Effort Number:	-	**Supported Phase:**	Development
Type:	Cost Plus Fixed Fee	**Award Date:**	March 14, 2023
Latest Modification Date:	-	**Definitization Date:**	-
Latest Modification No.:	-	**Work Start Date:**	March 20, 2023
Technical Data Rights:	Unlimited Rights		

Notes: This is an IDIQ contract. The overarching contract number is W31P4Q-19-D-0016. The contract number for TO 5 is W31P4Q-23-F-0084. All data in this report reflects TO 5. This TO provides maintenance and updates of the Launcher Interface Network Kit (LINK) software, engineering, development, prototyping, design reviews, and data collection, Hardware in the Loop (HWIL) search tracks, and flight test support with the airborne sensor ground station; test and range support. TO 5 was awarded on March 14, 2023.

Initial Price (TY$M) Target / Ceiling		Current Price (TY$M) Target / Ceiling		Estimate at Completion (TY$M) Contractor / PM		Initial Quantity	Current Quantity	Delivered Quantity
21.2	-	21.2	-	11.8	11.8	-	-	-

Work Completed (%):	61.49%
Cost Variance (TY$M):	-0.3
Schedule Variance (TY$M):	-0.8

Factors Contributing to Cost Variance and Projected Effects on Program Costs

The negative cost variance is primarily due to unplanned effort for development of builds with different classification levels and overruns on PI-16, PI-17, and PI-18 software capabilities. The contractor is working to improve the processes associated with the effort and the Project Office expects no overrun at task order completion.

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

The negative schedule variance is primarily due to CAA WBS delayed start/finish of various whitepaper/trade study tasks and ABS Requirements efforts. Worsened by $71K this month due. Tasks remain on track to complete by end of the period of performance.

(U) Contract and Effort Identification, Price, Quantity and Performance

Contract Number:	W31P4Q-22-D-0004	**Order Number:**	W31P4Q-22-F-0031
Contract Title:	IBCS LRIP/FRP DO 1	**Strategy:**	FAR 16.5: Indefinite Delivery Indefinite Quantity
CAGE:	9F909 - NORTHROP GRUMMAN SYSTEMS CORPORATION	**Contracting Office:**	ACC - Army Contracting Command
City, State/Province:	HUNTSVILLE, AL		
Effort Number:	-	**Supported Phase:**	Production
Type:	Fixed-Price Incentive (Firm Target)	**Award Date:**	December 23, 2021

Latest Modification Date:	July 5, 2023	**Definitization Date:**	December 23, 2021
Latest Modification No.:	P00016	**Work Start Date:**	December 23, 2021
Technical Data Rights:	Unlimited Rights		
Notes:	Delivery Order (DO) 0001 (W31P4Q-22-F-0031) of the IBCS LRIP/FRP hardware contract provides IBCS hardware end items and associated services (i.e., Engineering Change Proposals) for the Production and Deployment phase of the IAMD program. The overarching IDIQ contract includes ordering periods effective from December 23, 2021, to December 22, 2026. All data in this report reflects DO 0001. A contract modification was awarded November 28, 2022, to add LRIP Major End Item Quantities, Logistics training and fielding efforts associated with the additional LRIP quantities and extend the period of performance through December 2025. Quantity of EOCs to be delivered changed from 13 to 35 following the modification award.		

Initial Price (TY$M) Target / Ceiling		Current Price (TY$M) Target / Ceiling		Estimate at Completion (TY$M) Contractor / PM		Initial Quantity	Current Quantity	Delivered Quantity
107.7	-	806.1	-	712.4	717.0	13	35	-

Work Completed (%):	36.33%
Cost Variance (TY$M):	+13.1
Schedule Variance (TY$M):	+2.7

Factors Contributing to Cost Variance and Projected Effects on Program Costs

The positive cost variance is primarily driven by attrition in Resource Management and Subcontracts and delays in replacement, and continued efficiencies of the Business Management and Contracts teams.

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

The favorable schedule variance is primarily driven by material for all MEI quantities received earlier than anticipated due to contractor bulk purchasing material. Despite this favorable schedule variance, there is a portion of the material required to build the MEIs that does not meet the USG's desired delivery schedule. Contractor is collaborating with suppliers to accelerate delivery of key material items not yet received.

(U) Production

(U) Low-Rate Initial Production

	Original LRIP Determination	Current LRIP Determination
Total LRIP Quantity	19	45
Date	12/23/2009	6/30/2023
Reference	Milestone B ADM	Full Rate Production
LRIP Period	FY 2015 - 2016	FY 2020 - 2023
Total Procurement Quantity	285	486
LRIP Percentage of Total	6.7%	9.3%

Rationale if LRIP Quantity Exceeds 10% of Total Procurement Quantity (Current Determination)

N/A - LRIP quantity is below 10% of the total number of articles to be produced.

LRIP Notes

The Milestone C ADM approved an LRIP quantity of 19. The Software Acquisition Pathway Execution and LRIP Re-Characterization ADM in September 2021 re-characterized the IBCS FY 2022 quantity (26 IBCS EOCs) as LRIP versus FRP, increasing the total LRIP procurement from 19 to 45. The current estimate Procurement Quantity increase from the 454 AAO to 486 is due to the addition of 32 EOCs to support: the addition of the 16th Patriot Battalion, Ukraine supplemental requirements, the PDI, and increases to other AMD elements in the President's Budget 2024.

(U) Deliveries and Expenditures

(U) Acquisition Funding

	Total Estimate	Actual to Date	Actual, Percent Complete
Years Appropriated	48	19	39.6%
Appropriations (TY, $M)	13,230.2	5,294.2	40.0%
Expenditures (TY, $M)	13,230.2	3,793.9	28.7%

(U) End Items Delivered

	Total Required	Planned to Date	Actual to Date	Actual, Percent Complete
Development	25			
IAMD		25	25	
Procurement	486			
IAMD		6	6	
Total	**511**	**31**	**31**	**6.1%**

Notes

The current estimate Procurement Quantity increase from the 454 AAO to 486 is due to the addition of 32 EOCs to support: the addition of the 16th Patriot Battalion, Ukraine supplemental requirements, the PDI, and increases to other AMD elements in the President's Budget 2024.
25 RDT&E EOCs have been delivered to date: 12 RDT&E funded Command Post Platforms (CPPs) + 15 RDT&E funded S-280 prototypes + 4 RDT&E funded IOT&E Reconfigured S-280s, however, 6 of the RDT&E units were refreshed to become the Initial Operational Capability (IOC) units and were shifted from RDT&E to production units. Therefore, 31 RDT&E funded EOCs – 6 procurements funded reconfigured EOCs brings the total back to 25 RDT&E EOCs and 6 LRIP procurement deliveries to date.

(U) International Program Aspects

General Memo

The Letter of Offer and Acceptance (LOA) for Phase I was signed on March 28, 2018, in Warsaw, Poland (PL-B- UCW). Northrop Grumman was awarded a Firm-Fixed-Price contract. The focus is on providing Poland a Basic Operational Capability (BOC) in 4th Quarter FY 2023. In support of this, a contract modification was awarded to Northrop Grumman on February 1, 2022, and definitized on September 1, 2022. The contract was modified on October 7, 2022, and was definitized in June 2023, to provide additional support to include activities in New Equipment training, software, integration, and other critical support. Polish soldiers participated in IBCS familiarization training on their tactical Major End Items February 20 – March 31 at Redstone Arsenal, AL. Polish tactical MEIs were be shipped to Poland in April with in-country System Integration and Checkout in May 2023.

IAMD program is coordinating with the Kingdom of Saudi Arabia (KSA) regarding their interest in IBCS. In January 2022, the Country Team Assessment was completed for the KSA IAMD Program. Program representatives briefed KSA during the Terminal High Altitude Area Defense (THAAD) PMR on February 17, 2022, regarding IBCS and Lower Tier Air and Missile Defense Sensor (LTAMDS). Joint efforts are underway with the United States Air Force (USAF) to support engineering/technical workshops to design and demonstrate, through modeling and simulation, a tailored IBCS network using both existing and potential sensors and effectors within KSA inventory.

Exportability and Business Issues

N/A

Is design for international exportability planned?	Yes	**Industry/Partner Exportability Cost-Sharing?**	Yes

Program Protection: Technology Security and Foreign Disclosure Issues

IFMC PO performed an extensive CPI Assessment for MS C in consort with the Tri-Service Committee (TSC) and the Army Research and Technology Protection Center (ARTPC). The CPI Assessment included identification of current and expected future indigenous CPI along with inherited CPI from adapted components. Horizontal protection requirements for inherited CPI are included in the resulting Program Protection Plan (PPP) for MS C and the AT Plan. The CPI Assessment is being reviewed as IBCS approaches FRP. The PPP includes complete appendices for Supply Chain Risk Management (SCRM) and Cyber Security Strategy (aka Information Assurance). In addition, the PPP includes a Technology Assessment and Control Plan (TA/CP) signed by the TASM that in turn informs the Designation of Delegation Authority Letters (DDLs) required for exportability efforts that are underway.

(U) Agreements

Activity Date	Type	Agreement Number	International Partner(s)	Quantity	Funding (TY$M)
4/12/2018	FMS LOA	PL-B-UCW	Poland (PL)	6	1,500.0

(U) Agreement Information			
Partner(s):	Poland (PL)	**Activity Date:**	4/12/2018
Type:	Foreign Military Sales: Letter of Offer and Acceptance	**Agreement Number:**	PL-B-UCW
Notes:	6 x Engagement Operations Centers with associated hardware and services.		

Poland (PL) Fiscal Year	Funding (TY$M)	Quantity
2024	1,500.0	6
Total	**1,500.0**	**6**

Modernized Selected Acquisition Report Supplement

Integrated Air and Missile Defense (IAMD)

FY 2025 President's Budget

Effective: December 31, 2023

MSAR Supplement Sections

Program Description

Program Use of the Adaptive Acquisition Framework

Technologies and Systems Engineering

Funding Sources (Acquisition)

Funding Sources (Operating and Support)

Acquisition Estimate and Quantity Summary

Annual Acquisition Estimates by Appropriation Account

Acquired System Annual End-Item Quantities by Appropriation Account

Nuclear Costs

Operational Fielding Plan

O&S Independent Cost Estimate

Annual Operating and Support Estimates by Cost Element

Program Description

Full Name
Integrated Air and Missile Defense

Short Name
IAMD

PNO
205

Lead Component
Army

AAF Pathway
MCA

Acquisition Type
MDAP

Acquired Systems
IAMD

Related Programs

Full Name	PNO	Pathway	Type	ACAT/ BCAT	Acquisition Status	Costs in SAR? Acq	Costs in SAR? O&S

Program Use of the Adaptive Acquisition Framework

The FY 2019 National Defense Authorization Act (NDAA) identified Army Integrated Air and Missile Defense (AIAMD) as an Agile Development pilot program, as defined in Section 873 of the FY 2018 NDAA. The Integrated Fires Mission Command Program Office (IFMC PO) was selected to implement an Agile or Iterative Development Methods Pilot Program and the Office of the Secretary of Defense (OSD) designated AIAMD as the Army's only Development, Security, and Operations (DevSecOps) Pathfinder program. Through Agile methods, the IFMC PO will provide the Warfighter with capabilities faster and with minimal re-work due to Warfighter feedback from requirements realization to final product testing and deployment. The Agile software development approach is in line with Department of Defense's (DoD's) software acquisition policy for software intensive programs. The Defense Acquisition Executive (DAE) signed an Acquisition Defense Memorandum (ADM) on September 21, 2021 validating that the AIAMD program completed its Agile pilot in accordance with FY 2018 NDAA Section 873, and approved transition from the Software Acquisition Pathway Planning Phase into the Execution Phase of the pathway.

Technologies and Systems Engineering

Integrated Air and Missile Defense

Major Software Efforts

Title	Status	Fielding Date	Description
Minimum Viable Product	Development		Yearly delivery of Agile software

Major Engineering Changes

Title	Original Need Date	Fielding Date	Description, Rationale and Program Impacts

Funding Sources (Acquisition)

Acquisition Funding Notes

Integrated Air and Missile Defense

Category	Account	BA	Line Item	Program Element	RDT&E Project	Shared	Sunk
RDT&E	2040A	05	0605457A - Army Integrated Air and Missile Defense (AIAMD)	0605457A	S40 - Army Integrated Air and Missile Defense		
Procurement	2035A	02	9280BZ5075 - IAMD Battle Command System	0214400A	-		
O&M	2020A	04	435 - Other Service Support	0702806A	-		
	Note: This is PEO MS Acq. O&M for core/TDA SEPM						

Funding Sources (Operating and Support)

Note: Budget lines fund activites executed by the Program Office or Sustainment Office.

Operating and Support Funding Notes

No data for 2023 MSAR

Integrated Air and Missile Defense

Category	Account	BA	Line Item	Program Element	RDT&E Project	Shared	Sunk

Acquisition Estimate and Quantity Summary

Integrated Air and Missile Defense

Acquisition Estimates

Category	PB 2025	TY ($M)	Current Base Year CY2023 ($M)	Original Base Year CY2009 ($M)	Report Fiscal Year CY2024 ($M)
RDT&E		6,496.3	6,817.3	4,986.3	6,980.6
Procurement		6,594.8	5,757.4	4,211.0	5,895.3
MILCON		-	-	-	-
O&M		139.1	128.1	93.7	131.1
Total Acquisition		13,230.1	12,702.7	9,290.9	13,007.1
PAUC		25.891	24.859	18.182	25.454
APUC		13.570	11.846	8.665	12.130

Acquisition End-Item Quantities

System	PB 2025	Development	Procurement
IAMD		25	486
Total		**25**	**486**

Unit Description

The Army IAMD unit of measure is the Engagement Operations Center (EOC) that provides the common mission command capability.

Current and Future Years Defense Program Summary, TY($M)

Appropriation	Prior	2024	2025	2026	2027	2028	2029	To Complete	Total
RDT&E	3,592.4	254.2	340.3	357.9	383.0	298.9	316.2	953.4	6,496.3
Procurement	1,078.6	412.6	403.0	584.3	651.4	449.1	509.1	2,506.8	6,594.8
MILCON	-	-	-	-	-	-	-	-	-
O&M	38.3	9.3	10.4	9.7	9.9	10.1	10.3	41.0	139.1
PB 2025 Total	**4,709.3**	**676.0**	**753.7**	**951.9**	**1,044.3**	**758.2**	**835.5**	**3,501.2**	**13,230.1**

Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

Integrated Air and Missile Defense

Source for TY$-CY$ Conversion: ASN FMB-6 Inflation Rates and Outlay Factors for DA, DoN and DW accounts: 17 Jan 2024

2040A - Research, Development, Test & Eval, Army					
fiscal year		Other/ Unallocated	Total TY($M)	Weighted Rate	Total CY2023 ($M)
Total		**6,496.3**	**6,496.3**	**-**	**6,817.3**
2006		23.700	23.7	0.700791	33.8
2007		36.300	36.3	0.717705	50.6
2008		48.000	48.0	0.731450	65.6
2009		114.700	114.7	0.740798	154.8
2010		164.700	164.7	0.752005	219.0
2011		246.700	246.7	0.766789	321.7
2012		262.000	262.0	0.778869	336.4
2013		247.400	247.4	0.792113	312.3
2014		358.681	358.7	0.807373	444.3
2015		147.249	147.2	0.820928	179.4
2016		222.074	222.1	0.829650	267.7
2017		273.240	273.2	0.847309	322.5
2018		339.049	339.0	0.862643	393.0
2019		322.100	322.1	0.876820	367.4
2020		211.634	211.6	0.905169	233.8
2021		213.950	214.0	0.943252	226.8
2022		152.200	152.2	0.986755	154.2
2023		208.745	208.7	1.025786	203.5
2024		254.163	254.2	1.050083	242.0
2025		340.288	340.3	1.072537	317.3
2026		357.927	357.9	1.095061	326.9
2027		383.003	383.0	1.118057	342.6
2028		298.927	298.9	1.141536	261.9
2029		316.151	316.2	1.165508	271.3
2030		189.814	189.8	1.189984	159.5
2031		182.377	182.4	1.214974	150.1
2032		197.870	197.9	1.240488	159.5
2033		185.824	185.8	1.266538	146.7
2034		197.501	197.5	1.293136	152.7

Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

Integrated Air and Missile Defense

Source for TY$-CY$ Conversion: ASN FMB-6 Inflation Rates and Outlay Factors for DA, DoN and DW accounts: 17 Jan 2024

2035A - Other Procurement, Army									
fiscal year	End Item Recurring Flyaway	Non-End Item Recurring Flyaway	Non-Recurring Flyaway	Initial Spares	Depot Activation	Other/ Unallocated	Total TY($M)	Weighted Rate	Total CY2023 ($M)
Total	**6,594.8**	**-**	**-**	**-**	**-**	**-**	**6,594.8**	**-**	**5,757.4**
2006							-	0.704271	-
2007							-	0.721402	-
2008							-	0.733543	-
2009							-	0.743272	-
2010							-	0.756899	-
2011							-	0.770426	-
2012							-	0.782176	-
2013							-	0.797842	-
2014							-	0.811039	-
2015							-	0.822877	-
2016	20.917						20.9	0.834461	25.1
2017							-	0.852597	-
2018							-	0.870228	-
2019							-	0.891461	-
2020	29.629						29.6	0.926558	32.0
2021	198.587						198.6	0.972265	204.3
2022	370.091						370.1	1.011689	365.8
2023	459.343						459.3	1.039773	441.8
2024	412.556						412.6	1.063043	388.1
2025	403.028						403.0	1.085543	371.3
2026	584.262						584.3	1.108339	527.2
2027	651.373						651.4	1.131614	575.6
2028	449.114						449.1	1.155378	388.7
2029	509.060						509.1	1.179641	431.5
2030	576.827						576.8	1.204414	478.9
2031	578.685						578.7	1.229706	470.6
2032	557.318						557.3	1.255530	443.9
2033	376.366						376.4	1.281896	293.6
2034	417.630						417.6	1.308816	319.1

Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

Integrated Air and Missile Defense

Source for TY$-CY$ Conversion: ASN FMB-6 Inflation Rates and Outlay Factors for DA, DoN and DW accounts: 17 Jan 2024

2020A - Operation & Maintenance, Army					
fiscal year		Other/ Unallocated	Total TY($M)	Weighted Rate	Total CY2023 ($M)
Total		**139.1**	**139.1**	**-**	**128.1**
2006			-	0.701016	-
2007			-	0.717551	-
2008			-	0.731280	-
2009			-	0.738716	-
2010			-	0.749476	-
2011			-	0.765755	-
2012			-	0.776700	-
2013			-	0.787426	-
2014			-	0.799850	-
2015			-	0.807840	-
2016			-	0.822297	-
2017			-	0.836144	-
2018			-	0.852906	-
2019		4.425	4.4	0.872310	5.1
2020		10.244	10.2	0.896199	11.4
2021		6.323	6.3	0.940037	6.7
2022		8.462	8.5	0.986606	8.6
2023		8.851	8.9	1.022131	8.7
2024		9.311	9.3	1.046253	8.9
2025		10.391	10.4	1.068594	9.7
2026		9.707	9.7	1.091035	8.9
2027		9.911	9.9	1.113946	8.9
2028		10.118	10.1	1.137339	8.9
2029		10.331	10.3	1.161223	8.9
2030		10.548	10.5	1.185609	8.9
2031		8.967	9.0	1.210507	7.4
2032		9.104	9.1	1.235928	7.4
2033		6.135	6.1	1.261882	4.9
2034		6.264	6.3	1.288382	4.9

Acquired System Annual End-Item Quantities by Appropriation Account

(Aligned to Budget Position: PB 2025)

Integrated Air and Missile Defense

2040A - Research, Development, Test & Eval, Army				
fiscal year	IAMD			Total
Total	**25**			**25**
Undistributed				-
2019	25			25

Acquired System Annual End-Item Quantities by Appropriation Account

(Aligned to Budget Position: PB 2025)

Integrated Air and Missile Defense

2035A - Other Procurement, Army				
fiscal year	IAMD			Total
Total	**486**			**486**
Undistributed				-
2019				-
2020	6			6
2021	11			11
2022	11			11
2023	14			14
2024	22			22
2025	16			16
2026	50			50
2027	61			61
2028	27			27
2029	49			49
2030	72			72
2031	81			81
2032	66			66

Nuclear Costs

Integrated Air and Missile Defense

Program's Use of Department of Energy Resources

No data for 2023 MSAR

Operational Fielding Plan

Integrated Air and Missile Defense

System: IAMD

Fielding and Inventory Notes

IAMD Fielding Plan and Inventory

fiscal year	Store	Field	Expend/Loss	Decommission	Inventory
2023					6
2024		22			28
2025		14			42
2026		22			64
2027		16			80
2028		50			130
2029		61			191

O&S Independent Cost Estimate

Integrated Air and Missile Defense

Independent and Current Cost Estimate Comparison

Category CY2023 ($M)	Independent Cost Estimate 4/10/2023	Current Estimate 4/10/2023	Variance with ICE (%)
Unit-Level Manpower	7,453.2	7,453.2	0%
Unit Operations	286.1	286.1	0%
Maintenance	1,481.3	1,481.3	0%
Sustaining Support	3,412.6	3,412.6	0%
Continued System Improvements	1,899.0	1,899.0	0%
Other			-
Total O&S	**14,532.2**	**14,532.2**	**0%**

Independent Cost Estimate Source

Event: Full Rate Production Decision Review
Type: Independent Cost Estimate
Approved by: OSD Cost Assessment & Program Evaluation, April 10, 2023

Current Cost Estimate Source

Type: Independent Cost Estimate
Approved by: OSD Cost Assessment & Program Evaluation, April 10, 2023
Note: Annual O&S Estimates not available at this time.

Cost Estimate Variance Explanation

Annual Operating and Support Estimates by Cost Element

Integrated Air and Missile Defense

System: IAMD

Source for TY-CY Conversion:

Operating and Support Cost Elements							
fiscal year	1.0 Unit-Level Manpower	2.0 Unit Operations	3.0 Maintenance	4.0 Sustaining Support	5.0 Continuing System Improvements	Other	Total CY2023 ($M)
Total	-	-	-	-	-	-	-