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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605457A / <i>Army Integrated Air and Missile Defense (AIAMD)</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	211.634	206.850	157.873	-	157.873	-	-	-	-	-	-
S40: <i>Army Integrated Air and Missile Defense</i>	-	211.634	206.850	157.873	-	157.873	-	-	-	-	-	-

Program MDAP/MAIS Code: 205

A. Mission Description and Budget Item Justification

The Army Integrated Air and Missile Defense (AIAMD) program is a designated Major Defense Acquisition Program (MDAP).

The AIAMD program is a direct response to the U.S. Army Air and Missile Defense (AMD) Concept and Operational and Organizational (O&O) Plan for the Future Force, the AIAMD System of Systems (SoS) Capabilities Development Document (CDD) and the AMD Task Force Concept of Operations (CONOPS). The AIAMD Program is uniquely structured to enable the development of an overarching SoS capability with all participating Department of Defense (DoD) Air Defense Artillery (ADA) 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 IAMD Battle Command Systems (IBCS) Engagement Operations Center (EOC) that provides the common Mission Command capability, (2) the Integrated Fire Control 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 AIAMD Program provides advanced capabilities to the Army through agile software development and a network-centric SoS capability (also referred to as "Plug and Fight") 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 single points of failure that have plagued AMD design in the past. The AIAMD program provides the user with the ability to train on a single C2 system, resulting in overall training savings. The AIAMD program also provides the Army with the ability to procure components that interface with the Integrated Fire Control Network (IFCN), alleviating the cost of procuring total system capabilities in the future.

AIAMD IOC will be delivered through the fielding of the IBCS-based AIAMD architecture including the IBCS EOC, Integrated Fire Control Network (IFCN) Relay, Sentinel A3, and PATRIOT components working in an integrated manner through the IFCN connection. The government controlled open architecture enables integration of beyond IOC capabilities to meet emerging threats and fielding to include Enduring Indirect Fire Protection Capability (IFPC), Air Defense Airspace Management (ADAM) Cells, ADA Brigade, Army Air and Missile Defense Command (AAMDC), and Terminal High Altitude Area Defense (THAAD).

Funding in FY 2022 supports agile software development and integration, developmental and operational testing, and Initial Operational Test and Evaluation (IOT&E) in support of Initial Operational Capability. Specific test efforts include: developmental testing and requirements verification of the latest agile SW build; IOT&E flight tests; conducting collective training and integration activities for integrated fires capabilities including Lower Tier Air and missile Defense Sensor (LTAMDS) and IFPC.

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Funding in FY 2022 also supports the beginning of Remote Interceptor Guidance-360 (RIG-360) development and integration efforts, which will ultimately provide integration of an independent, adapted Uplinker into IBCS to support 360 degree PAC-3 Missile Segment Enhancement (MSE) engagements outside the coverage of the current PATRIOT Radar.

AIAMD is a critical component of the Army's Air and Missile Defense strategy and is a top AMD Cross Functional Team modernization priority program.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	208.638	193.929	63.678	-	63.678
Current President's Budget	211.634	206.850	157.873	-	157.873
Total Adjustments	2.996	12.921	94.195	-	94.195
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	20.000			
• Congressional Directed Transfers	10.963	-			
• Reprogrammings	-7.967	-			
• SBIR/STTR Transfer	-	-7.079			
• Adjustments to Budget Years	-	-	94.195	-	94.195

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: S40: *Army Integrated Air and Missile Defense*

Congressional Add: *Counter Emerging Threat*

	FY 2020	FY 2021
	15.000	20.000
Congressional Add Subtotals for Project: S40	15.000	20.000
Congressional Add Totals for all Projects	15.000	20.000

Change Summary Explanation

FY 2022 increase of \$94.195 million was to address the independent cost assessment to fund the Milestone C Army Cost Position.

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605457A / Army Integrated Air and Missile Defense (AIAMD)				Project (Number/Name) S40 / Army Integrated Air and Missile Defense			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
S40: Army Integrated Air and Missile Defense	-	211.634	206.850	157.873	-	157.873	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Army Integrated Air and Missile Defense (AIAMD) program is a designated Major Defense Acquisition Program (MDAP).

The AIAMD program is a direct response to the U.S. Army Air and Missile Defense (AMD) Concept and Operational and Organizational (O&O) Plan for the Future Force, the AIAMD System of Systems (SoS) Capabilities Development Document (CDD) and the AMD Task Force Concept of Operations (CONOPS). The AIAMD Program is uniquely structured to enable the development of an overarching SoS capability with all participating Department of Defense (DoD) Air Defense Artillery (ADA) 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 IAMD Battle Command Systems (IBCS) Engagement Operations Center (EOC) that provides the common Mission Command capability, (2) the Integrated Fire Control 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 AIAMD Program provides advanced capabilities to the Army through agile software development and a network-centric SoS capability (also referred to as "Plug and Fight") 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 single points of failure that have plagued AMD design in the past. The AIAMD program provides the user with the ability to train on a single C2 system, resulting in overall training savings. The AIAMD program also provides the Army with the ability to procure components that interface with the Integrated Fire Control Network (IFCN), alleviating the cost of procuring total system capabilities in the future.

AIAMD IOC will be delivered through the fielding of the IBCS-based AIAMD architecture including the IBCS EOC, Integrated Fire Control Network (IFCN) Relay, Sentinel A3, and PATRIOT components working in an integrated manner through the IFCN connection. The government controlled open architecture enables integration of beyond IOC capabilities to meet emerging threats and fielding to include Enduring Indirect Fire Protection Capability (IFPC), Air Defense Airspace Management (ADAM) Cells, ADA Brigade, Army Air and Missile Defense Command (AAMDC), and Terminal High Altitude Area Defense (THAAD).

Funding in FY 2022 supports agile software development and integration, developmental and operational testing, and Initial Operational Test and Evaluation (IOT&E) in support of Initial Operational Capability. Specific test efforts include: developmental testing and requirements verification of the latest agile SW build; IOT&E flight tests; conducting collective training and integration activities for integrated fires capabilities including Lower Tier Air and missile Defense Sensor (LTAMDS) and IFPC.

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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605457A / Army Integrated Air and Missile Defense (AIAMD)	Project (Number/Name) S40 / Army Integrated Air and Missile Defense
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Funding in FY 2022 also supports the beginning of Remote Interceptor Guidance-360 (RIG-360) development and integration efforts, which will ultimately provide integration of an independent, adapted Uplinker into IBCS to support 360 degree PAC-3 Missile Segment Enhancement (MSE) engagements outside the coverage of the current PATRIOT Radar.

AIAMD is a critical component of the Army's Air and Missile Defense strategy and is a top AMD Cross Functional Team modernization priority program.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
<p>Title: Product Development</p> <p>Description: Product development in support of agile software development.</p> <p>FY 2021 Plans: Agile software development in Program Increment (PI) 5-8 supports IOC, with required changes for IOT&E, and beyond-IOC capabilities. The exact composition of the software build is determined based on agile development concepts, directed in the FY 2019 National Defense Authorization Act (NDAA), in which the user determines the priorities from the backlog in a Capabilities Review and PI planning sessions prior to the start of each PI. Anticipated changes for IOC include software changes to defeat emerging threats, user-identified suitability requirements, and corrections for issues identified in the Limited User Test (LUT). Continued contract requirements supporting the IOC capability addressed: hardware issues identified in LUT, reliability improvements, software requirements verification in PI 1-4 , logistics product updates, test support, Information Assurance/Cyber Security support, and integration of PATRIOT Ground Equipment to include corrective actions for LINK hardware and software from LUT. Government Systems Engineering and Logistics support continued with latest agile software build, Technical Data Package (TDP) updates for hardware obsolescence and engineering change proposals (ECPs); along with programmatic and logistics support.</p> <p>FY 2022 Plans: The AIAMD Systems Engineering and Integration provides support for developmental and operational test activities; to include software integration testing and preparation/conduct of the Initial Operational Test and Evaluation flight tests. Agile software development continues to support enduring development efforts and includes software fixes and improvements to counter emerging threats and incorporate emerging technology. Enduring capabilities require modeling and simulation Government Furnished Equipment of adapting weapon systems to develop and integrate with IBCS.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Decrease is due to the transition from EMD to enduring development efforts to counter emerging threats and maintain agile development. Funding is reflective of the Milestone C Army Cost Position.</p>	156.302	80.864	55.415
<p>Title: Test and Evaluation</p>	40.332	38.960	35.483

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>Description: Test and Evaluation support for modeling and simulation, developmental test activities and Initial Operational Test and Evaluation (IOT&E).</p> <p>FY 2021 Plans: Provides for continuation of Modeling and Simulation efforts at the Government Systems Integration Lab, Joint Interoperability Test Support, Army Test and Evaluation Center and White Sands Missile Range test support for developmental and operational test activities. Provides for preparation and conduct of the IOT&E. Specific test efforts include: developmental testing and software requirements verification in PI 1-8; delta qualification testing; interoperability certification; procurement of targets for IOT&E; events leading up to IOT&E including Logistics Demonstration, New Equipment Training, Collective Training, and test planning; and the start of IOT&E.</p> <p>FY 2022 Plans: Provides for continuation of Modeling and Simulation efforts at the Government Systems Integration Lab, Joint Interoperability Test Support, Army Test and Evaluation Center and White Sands Missile Range test support for developmental and operational test activities. Provides for preparation and conduct of the IOT&E flight tests and Full Rate Production Decision in third quarter FY 2022. Specific test efforts include: developmental testing and requirements verification of the latest agile software build; collective training with LTAMDS; OT&E with LTAMDS and Enduring IFPC.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Decrease is due to the transition from EMD to enduring development efforts to counter emerging threats and maintain agile development. Funding is reflective of the Milestone C Army Cost Position.</p>				
<p>Title: Product Development - Beyond Initial Operational Capability (IOC)</p> <p>Description: Product development in support of agile software development and integration efforts for additional capability beyond that fielded at IOC.</p> <p>FY 2021 Plans: Agile software development in PI 5-8 supports IOC and also includes beyond-IOC capabilities. As part of the DoD Section 873 pilot, as directed in Section 869 of the FY 2019 National Defense Authorization Act (NDAA), IAMD is using Agile development processes to develop additional capabilities to meet Warfighter requirements above and beyond those delivered at IOC. The exact composition of the software build is determined based on agile development concepts in which the user determines the priorities from the backlog and PI planning sessions prior to the start of each PI. As part of the Agile process, the user will prioritize and direct the requirements/capabilities within the development cycle as guided by a user-prioritized roadmap. The specific requirements to be developed in FY 2021 include: convergence of integrated fires capability; integration of LTAMDS; integration of other user directed sensors; and other requirements from the backlog. Additional efforts include systems</p>		-	60.395	50.526

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>engineering and integration, software requirements verification, logistics product updates, contractor test support, Information Assurance /Cyber Security support, integration support from prime contractors of integrated systems, Technical Data Package (TDP) updates for hardware obsolescence and engineering change proposals (ECPs); and government systems engineering and programmatic support.</p> <p>FY 2022 Plans: Funding is provided for initial Remote Interceptor Guidance-360 (RIG-360) development and integration efforts, which will ultimately provide integration of an independent, adapted Uplinker into IBCS to support 360 degree PAC-3 Missile Segment Enhancement (MSE) engagements outside the coverage of the current PATRIOT radar. Funding also supports agile software development for beyond IOC Capabilities including LTAMDS and IFPC.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Funding is reflective of the Milestone C Army Cost Position.</p>				
<p>Title: Test and Evaluation - Beyond IOC Capability</p> <p>Description: Test and Evaluation support for modeling and simulation, developmental test, and follow-on operational test events for additional capability beyond that fielded at IOC.</p> <p>FY 2021 Plans: Provides for continuation of Modeling and Simulation efforts at the Government Systems Integration Lab, Joint Interoperability Test Support, Army Test and Evaluation Center and White Sands Missile Range test support for developmental test activities. Specific test efforts include: software requirements verification in PI 5-8, interoperability certification, cyber testing, and test planning of future developmental and operational tests.</p> <p>FY 2022 Plans: Provides for continuation of Modeling and Simulation efforts at the Government Systems Integration Lab, Joint Interoperability Test Support, Army Test and Evaluation Center, Orange Flag, Project Convergence, Joint All-Domain Command and Control, and White Sands Missile Range test support for developmental test activities. Specific test efforts include: software development and software requirements verification in PI 9-12, cyber testing, and test planning of future developmental and operational tests.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Funding increase is a result of increased testing for beyond IOC capabilities, to meet Warfighter requirements.Funding is reflective of the Milestone C Army Cost Position.</p>		-	6.631	16.449
Accomplishments/Planned Programs Subtotals		196.634	186.850	157.873

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	FY 2020	FY 2021
Congressional Add: Counter Emerging Threat	15.000	20.000
FY 2020 Accomplishments: FY20 efforts were built upon prior years' funding to identify processes, tools, and techniques needed to transform development and integration of networked sensors to keep pace with emerging threats. Specifically, efforts included: traded development and modeling and simulation for future integration efforts; executed a Kill Chain Architecture Trade Study; and continued implementing a synthetic environment designed to support future, collaborative digital engineering efforts across Program Offices, government labs, and industry and academia partners.		
FY 2021 Plans: \$20M Add to develop a System of Systems (SoS) Integration framework of standards, processes, techniques and tools to digital-engineer capability and design requirements for systems, subsystems, and components that are part of the IAMD enterprise.		
Congressional Adds Subtotals	15.000	20.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• C53101: MSE Missile	702.437	678.148	776.696	-	776.696	-	-	-	-	-	-
• EF9: System Integration and Test	93.743	-	0.182	-	0.182	-	-	-	-	-	-
• EX2: Lower Tier Air Missile Defense (LTAMD) Capability	364.154	308.805	327.690	-	327.690	-	-	-	-	-	-
• C50016: System Integration and Test Procurement	107.157	-	-	-	-	-	-	-	-	-	-
• EY7: IFPC Increment 2 - Block 1	186.369	153.362	233.512	-	233.512	-	-	-	-	-	-
• C62002: IFPC INC 2-1 BLOCK 1 SYSTEM	9.337	62.461	25.253	-	25.253	-	-	-	-	-	-
• E10: Sentinel	91.782	105.271	127.919	-	127.919	-	-	-	-	-	-
• BZ5075: IAMD Battle Command System	29.629	198.587	301.872	-	301.872	-	-	-	-	-	-
• 146: Air & Msl Defense Planning Control Sys	12.135	8.085	2.877	-	2.877	-	-	-	-	-	-
• AD5070: AIR & MSL Defense Planning & Control Sys	39.061	62.517	67.193	-	67.193	-	-	-	-	-	-

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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 149: Counter-Rockets, Artillery & Mortar	6.084	0.875	-	-	-	-	-	-	-	-	-
• 0604403A: Future Interceptor	1.918	-	7.895	-	7.895	-	-	-	-	-	-
• 0604117A: Maneuver - Short Range Air Defense (M-SHORAD)	41.690	4.813	39.376	-	39.376	-	-	-	-	-	-
• C14300: M-SHORAD - Procurement	233.300	517.287	331.575	-	331.575	-	-	-	-	-	-

Remarks
 This program is an integral part of the Army Integrated Air and Missile Defense (AIAMD) architecture. It provides for development of a common Integrated Fire Control System through a government controlled open architecture approach allowing for integration of Air Defense Artillery (ADA) components as they become available. This approach enables the AIAMD program to maintain its baseline program independent of fluctuation of other programs.

D. Acquisition Strategy
 The AIAMD acquisition strategy delivers an Initial Operational Capability (IOC) in FY 2022. The capabilities are delivered through the fielding of the IAMD Battle Command System (IBCS) based AIAMD architecture including the IBCS Engagement Operations Center (EOC), Sentinel A3, and PATRIOT (through a Radar Interface Unit (RIU)) components connected via an Integrated Fire Control Relay, working in an integrated manner while also incorporating the insertion of emerging technology. Future capabilities include the incorporation of IBCS functionality into Enduring Indirect Fire Protection Capabilities (IFPC), Lower Tier Air and Missile Defense Sensor (LTAMDS), Terminal High Altitude Area Defense (THAAD) batteries, and other Army and Joint weapon systems using an agile development process.

- Key principles of the AIAMD acquisition approach are the following:
- Migrate from system-based acquisition to competitive, component-based acquisition using agile development/operations methodology IAW FY 2019 National Defense Authorization Act direction.
 - Use system-of-systems acquisition approach with collaboration among AIAMD, PEO MS, PEO C3T, and Brigade Combat Team (BCT) Modernization Component Project Offices, Missile Defense Agency (MDA), and other Service Project Offices to network-enable weapons and sensor components.
 - Develop and procure a common Army IBCS EOC that replaces seven weapon system unique Battle Management Command, Control, Communications, Computers and Intelligence (BMC4I) components.
 - Establish product lines used to evaluate and select, modify and integrate modular open systems hardware and software common configuration items
 - Conduct architecture-based System Engineering, Integration and Test (SEI&T) activities for an incrementally fielded configuration of the AIAMD Integrated Fire Control Network-compatible IBCS EOC, weapons and sensor system components to include testing of resiliency and survivability in a denied environment.

Beginning in FY 2019, AIAMD is included in the DoD Section 873 Agile Development pilot as directed in Section 869 of the FY 2019 National Defense Authorization Act. As part of this pilot, the AIAMD government team will take on additional responsibilities for software development and will initially implement activities under an

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<p>Other Transaction Authority (OTA) agreement through second quarter FY 2022. Following the initial OTA, a competitive contract with multiple vendors (to include non-traditional defense contractors) is planned for award in second quarter FY 2022.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army												Date: May 2021			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0605457A / Army Integrated Air and Missile Defense (AIAMD)				S40 / Army Integrated Air and Missile Defense							
Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	MIPR	Various : Huntsville, AL	35.528	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			35.528	-		-		-		-		-	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Space and Missile Defense (ASMD) System of Systems (SOS) Hardware-in-the- Loop Testbed	C/CPFF	Various : Huntsville, AL and multiple other locations	17.697	-		-		-		-		-	0.000	17.697	-
AIAMD System Engineering & Integration	C/CPFF	Various : Huntsville, AL	200.408	16.356	Oct 2019	21.006	Oct 2020	14.343	Oct 2021	-		14.343	Continuing	Continuing	Continuing
IAMD Engineering Manufacturing and Development	SS/ Various	Northrop Grumman, Raytheon, Lockheed Martin and Other : Huntsville, AL and Various other locations	1,508.184	118.266	Oct 2019	104.425	Oct 2020	56.572	Oct 2021	-		56.572	Continuing	Continuing	Continuing
Government Furnished Equipment	MIPR	Various : Multiple	29.356	9.144	Oct 2019	4.883	Oct 2020	2.755	Oct 2021	-		2.755	Continuing	Continuing	Continuing
Government Systems Engineering and Logistics	Various	Various : Huntsville, AL	103.604	12.536	Oct 2019	10.945	Oct 2020	12.271	Oct 2021	-		12.271	Continuing	Continuing	Continuing
Advanced Electronic Protection Enhancement (AEPE)	Various	Various : TBD	21.000	-		-		-		-		-	0.000	21.000	-
Cyber Security	Various	Huntsville, AL : TBD	68.000	-		-		-		-		-	0.000	68.000	-
Counter Emerging Threat	Various	AMRDEC/Torch Technologies : Huntsville, AL	70.000	15.000		20.000		-		-		-	0.000	105.000	-

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Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0605457A / Army Integrated Air and Missile Defense (AIAMD)				S40 / Army Integrated Air and Missile Defense							
Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RIG-360 Development and Integration	SS/ Various	Lockheed Martin : Huntsville, AL and Various other locations	-	-		-		20.000		-		20.000	0.000	20.000	-
Subtotal			2,018.249	171.302		161.259		105.941		-		105.941	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Test Activities/ Army Evaluation Center/ Developmental Test Command/Operational Test Command	MIPR	Various : Multiple Locations	74.483	19.564	Oct 2019	18.933	Oct 2020	16.966	Oct 2021	-		16.966	Continuing	Continuing	Continuing
Modeling & Sim/Joint Interoperability Test Spt	MIPR	SED : Huntsville, AL	215.705	7.803	Oct 2019	15.728	Oct 2020	18.281	Oct 2021	-		18.281	Continuing	Continuing	Continuing
Range Support	MIPR	WSMR : White Sands, NM	59.380	12.965	Oct 2019	10.930	Oct 2020	16.685	Oct 2021	-		16.685	Continuing	Continuing	Continuing
Subtotal			349.568	40.332		45.591		51.932		-		51.932	Continuing	Continuing	N/A
Project Cost Totals			2,403.345	211.634		206.850		157.873		-		157.873	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605457A / Army Integrated Air and Missile Defense (AIAMD)	Project (Number/Name) S40 / Army Integrated Air and Missile Defense	

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026															
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4												
Modeling and Simulation	[Blue bar spanning all quarters from FY 2020 to FY 2025]																																							
EMD DT Continuation	[Blue bar]																																							
v4.5.0 Software (SW) Development	[Blue bar]																																							
v4.5.0 Developmental Ground/Flight Testing	[Blue bar]																																							
v4.5.1 Agile SW Development	[Blue bar]																																							
v4.5.1 SW Developmental Ground/Flight Testing					[Blue bar]																																			
v4.5.1 Agile SW HWIL Integration Testing and Reqmts Verification					[Blue bar]																																			
Software Version 4.6.0 Capabilities Review																					[Blue triangle 1]																			
Limited User Test																									[Blue bar]															
v4.6.0 Agile SW Development (IOT&E SW/PI-7)									[Blue bar]																															
v4.6.0 Agile SW HWIL Integration Testing and Reqmts Verification (IOTE SW/PI-7)									[Blue bar]																															
Milestone C Decision																									[Blue triangle 2]															
V4.6.0 Developmental Ground/Flight Testing (IOTE SW/PI-7)									[Blue bar]																															

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605457A / Army Integrated Air and Missile Defense (AIAMD)	Project (Number/Name) S40 / Army Integrated Air and Missile Defense

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Software Version 4.6.1 Capabilities Review							▲ 3																					
IOT&E (OTRR 2, Sustained Ops, M&S, Live Fire Test)									■																			
v4.6.1 Agile SW Development										■																		
v4.6.1 Agile SW HWIL Integration Testing and Requirements Verification											■																	
V4.6.1 Developmental Ground/Flight Testing												■																
Initial Operational Capability												▲ 4																
v4.6.2 Agile SW Development														■														
Full Rate Production Decision Review															▲ 5													
v4.6.2 Agile SW HWIL Integration Testing and Requirements Verification																■												
V4.6.2 Developmental Ground/Flight Testing																		■										
Delta Qualification Testing																			■									
Future Capability Agile SW Development and Test																						■						

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605457A / Army Integrated Air and Missile Defense (AIAMD)	Project (Number/Name) S40 / Army Integrated Air and Missile Defense

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Modeling and Simulation	1	2013	4	2025
EMD Developmental Test (DT)	4	2014	1	2017
Product Readiness Review (PRR)	4	2016	4	2016
EMD DT Continuation	1	2018	1	2020
v4.5.0 Software (SW) Development	2	2018	1	2020
v4.5.0 Developmental Ground/Flight Testing	3	2019	1	2020
v4.5.1 Agile SW Development	1	2020	4	2020
v4.5.1 SW Developmental Ground/Flight Testing	2	2020	2	2021
v4.5.1 Agile SW HWIL Integration Testing and Reqmts Verification	2	2020	1	2021
Software Version 4.6.0 Capabilities Review	3	2020	3	2020
Limited User Test	4	2020	4	2020
v4.6.0 Agile SW Development (IOT&E SW/PI-7)	1	2021	4	2021
v4.6.0 Agile SW HWIL Integration Testing and Reqmts Verification (IOTE SW/PI-7)	1	2021	4	2021
Milestone C Decision	2	2021	2	2021
V4.6.0 Developmental Ground/Flight Testing (IOTE SW/PI-7)	2	2021	1	2022
Software Version 4.6.1 Capabilities Review	3	2021	3	2021
IOT&E (OTRR 2, Sustained Ops, M&S, Live Fire Test)	4	2021	2	2022
v4.6.1 Agile SW Development	1	2022	4	2022
v4.6.1 Agile SW HWIL Integration Testing and Requirements Verification	1	2022	1	2023
V4.6.1 Developmental Ground/Flight Testing	2	2022	2	2023
Initial Operational Capability	3	2022	3	2022
v4.6.2 Agile SW Development	1	2023	4	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605457A / <i>Army Integrated Air and Missile Defense (AIAMD)</i>	Project (Number/Name) S40 / <i>Army Integrated Air and Missile Defense</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Full Rate Production Decision Review	1	2023	1	2023
v4.6.2 Agile SW HWIL Integration Testing and Requirements Verification	1	2023	1	2024
V4.6.2 Developmental Ground/Flight Testing	2	2023	2	2024
Delta Qualification Testing	2	2023	4	2023
Future Capability Agile SW Development and Test	1	2024	4	2026