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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Missile Defense Agency **Date:** February 2020

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604874C <i>I Improved Homeland Defense Interceptors</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	1,370.535	407.858	515.000	664.138	-	664.138	921.349	1,339.439	856.712	1,258.000	Continuing	Continuing
MD97: <i>Improved HD Interceptors</i>	1,330.086	385.978	36.581	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1,752.645
MD80: <i>Next Generation Interceptor Development (NGI)</i>	-	0.000	465.000	637.759	-	637.759	884.785	1,285.581	841.322	1,258.000	Continuing	Continuing
MD40: <i>Program Wide Support</i>	40.449	21.880	13.419	26.379	-	26.379	36.564	53.858	15.390	0.000	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

The increase from FY 2020 to FY 2021 provides a ramp-up for two contractors through Preliminary Design Review (PDR) to develop the Next Generation Interceptor (NGI).

FY 2020 - FY 2025 funding was realigned and adjusted from MD97 Improved HD Interceptors to a new project MD80 to reflect the NGI program.

A. Mission Description and Budget Item Justification

The Improved Homeland Defense Interceptor Program Element will deliver a NGI for Homeland Defense. The NGI acquisition covers the development, integration and testing of an All Up Round (AUR) boost vehicle/ kill vehicle system capable of surviving both the natural and hostile environments while countering the allocated threats. The NGI will provide the Warfighter a cost-effective solution that is lethal across the specified threat space and extensible to address future and evolving threats. The Government will issue a Request for Proposal in FY 2020 for a NGI acquisition, which covers the development, integration and testing of an AUR boost vehicle/ kill vehicle system.

B. Program Change Summary (\$ in Millions)

	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>
Previous President's Budget	421.820	412.363	326.922	-	326.922
Current President's Budget	407.858	515.000	664.138	-	664.138
Total Adjustments	-13.962	102.637	337.216	-	337.216
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-362.363			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	465.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-9.547	0.000			
• Missile Defeat and Defense Enhancement	0.000	0.000	0.000	-	0.000

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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604874C <i>I Improved Homeland Defense Interceptors</i>
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• Other Adjustment	-4.415	0.000	337.216	-	337.216
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Change Summary Explanation

FY2019 does not include the enacted rescissions of \$267 million for Redesigned Kill Vehicle (RKV) termination.

Decrease in FY 2019 reflects SBIR/STTR reduction, BTR of \$4.4 million and rescission of \$267 million for Redesigned Kill Vehicle (RKV) termination.

Net Increase in FY 2020 reflects the enacted Congressional decrease of \$362 million for RKV termination. \$140 million was transferred to the Midcourse Defense PE 0603882C for a more robust CE-1 reliability and Service Life Extension Program (SLEP) until the NGI deliveries begin in 2028. \$465 million was realigned to support NGI Competitive Development for two Contractors, provides risk reduction and for the funding for NGI program operation efforts.

The increase in FY 2021 provides a ramp-up for two contractors through PDR to develop the NGI.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Missile Defense Agency **Date:** February 2020

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors	Project (Number/Name) MD97 / Improved HD Interceptors
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
MD97: Improved HD Interceptors	1,330.086	385.978	36.581	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1,752.645
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Note

The decrease from FY 2020 to FY 2021 reflects the termination of the RKV program and realignment/adjustment of funding from MD97 to MD80. FY 2020 - FY 2025 funding was realigned and adjusted from MD97 Improved HD Interceptors to MD80 NGI.

A. Mission Description and Budget Item Justification

The improved Homeland Defense interceptor includes a RKV and the AUR engineering necessary to integrate the RKV with new and existing booster configurations. The RKV improves interceptor reliability, reduces unit cost, improves maintainability in the field, and improves performance against emerging threats. The AUR engineering enables RKV integration with new and existing boost vehicles for flight testing and operational fielding.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2019	FY 2020	FY 2021
Title: Improved Homeland Defense (HLD) Interceptor Development	376.336	34.442	0.000
Articles:	-	-	-
Description: HD development objectives include: redesigning the Ground-Based Defense (GMD) kill vehicle (KV), implementing tactical booster modifications, and conducting AUR system engineering. The RKV will be built with a modular, open architecture and designed with common interfaces and standards, making upgrades easier and broadening MDA's vendor and supplier base. The design for growth allows future upgradability. The AUR development approach integrates the RKV with the boost vehicle. The goal of all of these efforts is to develop and field an integrated set of capabilities to improve the reliability, survivability, lethality, and discrimination to defeat future threats.			
Specific and/or unique accomplishments to each FY are as follows:			
FY 2020 Plans: -RKV termination activities			
FY 2021 Plans: None; RKV terminated August 2019.			
FY 2020 to FY 2021 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors	Project (Number/Name) MD97 / Improved HD Interceptors

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021
The decrease from FY 2020 to FY 2021 reflects the termination of the RKV program and realignment/adjustment of funding from MD97 to MD80.			
<p>Title: Program Operations</p> <p align="right">Articles:</p> <p>Description: Program Operations provides for integrated program management of the Improved Homeland Defense Interceptor efforts. This effort includes: Technical and business management support, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management, and integration activities to ensure the program meets cost, schedule, and performance goals; GMD RKV program compliance with internal and external direction, policies, and regulations to deliver critical capability via a consistent and disciplined process; Mission Assurance and Manufacturing Engineering Program to include quality, configuration management, manufacturing, engineering, and safety in all phases of the system life cycle, throughout the supply chain and at all levels of assembly emphasizing high yield rates which minimize test and rework costs; technical and testing oversight, verification of hardware and software development, quality / safety / mission assurance, integrated logistics support, and government manpower and infrastructure to develop, test, and sustain the RKV.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2020 Plans: -RKV termination activities</p> <p>FY 2021 Plans: None; RKV terminated August 2019.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: The decrease from FY 2020 to FY 2021 reflects the termination of the RKV program and realignment/adjustment of funding from MD97 to MD80.</p>	9.642 -	2.139 -	0.000 -
Accomplishments/Planned Programs Subtotals	385.978	36.581	0.000

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0208866C: MD08: GMD Procurement	405.464	285.471	0.000	-	0.000	0.000	10.225	2.130	36.400	Continuing	Continuing
• 0208866C: MD08: Midcourse Defense O&M	139.204	153.218	158.054	-	158.054	175.511	179.368	219.013	169.852	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors	Project (Number/Name) MD97 / Improved HD Interceptors

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

Line Item	FY 2019	FY 2020	FY 2021	FY 2021	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Cost To	
			Base	OCO	Total					Complete	Total Cost
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	790.316	1,303.716	1,004.305	-	1,004.305	776.125	726.566	767.592	1,068.536	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	510.292	399.738	378.302	-	378.302	385.910	396.524	394.949	417.261	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	561.349	542.939	536.133	-	536.133	593.939	519.028	520.625	540.675	Continuing	Continuing
• 0604887C: <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	72.634	98.139	67.071	-	67.071	63.240	61.200	79.139	33.282	Continuing	Continuing

Remarks

D. Acquisition Strategy

MDA executed an acquisition strategy to develop an integrated RKV with a Cross-Industry team design solution. This concept included production sources from industry and provided a consolidated product that included the collective knowledge of and leveraged capabilities from the industry leaders in kill vehicle design and development. The industry teaming method incorporated the most viable technical approach from each contractor and allowed for combination of resources to shorten the learning curve and reduce the time needed to develop and begin initial production. This strategy allowed for industry to provide the best value and best design solution for the MDA while setting the conditions for future competition of production. The development phase was followed by initial production and then a competitive full rate production phase. The competitive production phase encompassed the purchase, production, and the integration of the proven components demonstrated in the development phase and provided competitive benefits to the Government. This strategy allowed industry to provide the best value and best design solution for MDA while setting the conditions for future competition of production. The Government, as the design authority, retained responsibility for the execution of the program cost, schedule, and the technical performance of the RKV to meet requirements levied on the contractor. The Government implemented a rigorous systems engineering process to ensure that the design and development efforts met requirements. This acquisition strategy was documented in the RKV Acquisition Plan signed by the Defense Acquisition Executive in October 2015.

In January of 2018, the MDA Director signed an Acquisition Strategy Decision Memorandum (ASDM) changing the acquisition strategy to execute the Missile Defeat and Defense Enhancement scope. The Development and Sustainment Contract (DSC) would continue with the Boeing Company to 1Q FY 2024 to build the 20 GBI's and 20 Silos with supporting test, engineering, software, and performance based logistics scope. This additional capability would provide 64 interceptors as well as maintain operation and support capabilities and support ground and flight tests. The Justification and Approval for this action was signed by the MDA Director on 2 January 2018.

In August 2019 the RKV program was terminated.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency **Date:** February 2020

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors	Project (Number/Name) MD97 / Improved HD Interceptors
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Improved Homeland Defense (HLD) Interceptor Development - GBI Consolidated Integration Facility Improvements	C/CPIF	Boeing : AL/AK/AZ	0.000	9.279	Nov 2018	0.000		0.000		-		0.000	0.000	9.279	0.000
Improved Homeland Defense (HLD) Interceptor Development - OGA/ FFRDC Booster Avionics Risk Reduction	MIPR	Draper : AL/CA	1.644	0.000		0.000		0.000		-		0.000	0.000	1.644	0.000
Improved Homeland Defense (HLD) Interceptor Development - PRIME AUR System Engineering and Development	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	49.840	0.000		0.000		0.000		-		0.000	0.000	49.840	0.000
Improved Homeland Defense (HLD) Interceptor Development - PRIME RKV Development	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	1,134.952	343.955	Oct 2018	34.382	Nov 2019	0.000		-		0.000	0.000	1,513.289	0.000
Improved Homeland Defense (HLD) Interceptor Development - Post-Intercept Assessment	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Improved Homeland Defense (HLD) Interceptor Development - Prior year no longer funded in the FYDP	Various	Various : Various	21.114	0.000		0.000		0.000		-		0.000	0.000	21.114	0.000
Improved Homeland Defense (HLD) Interceptor Development - RKV Development Lab and System Support	MIPR	AMRDEC : Redstone Arsenal, AL	76.827	23.102	Oct 2018	0.060	Nov 2019	0.000		-		0.000	0.000	99.989	0.000
Subtotal			1,284.377	376.336		34.442		0.000		-		0.000	0.000	1,695.155	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency **Date:** February 2020

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors	Project (Number/Name) MD97 / Improved HD Interceptors
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
Termination of the RKV program in August 2019 results in no cost to complete/total cost/target value of contract for MD97.

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Operations - Contract Support Services	C/CPFF	Various AL/AK / CA/CO/VA	26.590	5.830	Oct 2018	1.562	Oct 2019	0.000		-		0.000	0.000	33.982	0.000
Program Operations - FFRDC Support	MIPR	MIT : LL AL	3.132	0.000		0.000		0.000		-		0.000	0.000	3.132	0.000
Program Operations - Government Civilian Salaries	MIPR	MDA : AL/VA	8.066	2.352	Oct 2018	0.577	Oct 2019	0.000		-		0.000	0.000	10.995	0.000
Program Operations - Other Government Agencies	MIPR	Various AL/VA : FL/CO	6.718	1.460	Oct 2018	0.000		0.000		-		0.000	0.000	8.178	0.000
Program Operations - Prior year no longer funded in the FYDP	Various	Various : Various	0.552	0.000		0.000		0.000		-		0.000	0.000	0.552	0.000
Program Operations - Travel	MIPR	MDA : AL/VA	0.651	0.000		0.000		0.000		-		0.000	0.000	0.651	0.000
Subtotal			45.709	9.642		2.139		0.000		-		0.000	0.000	57.490	N/A

Remarks
Termination of the RKV program in August 2019 results in no cost to complete/total cost/target value of contract for MD97.

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency **Date:** February 2020

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD97 / <i>Improved HD Interceptors</i>
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,330.086	385.978	36.581	0.000	-	0.000	0.000	1,752.645	N/A

Remarks
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Missile Defense Agency **Date:** February 2020

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD97 / <i>Improved HD Interceptors</i>
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	Significant Event Complete ▲	Significant Event Planned △	Milestone Decision Complete ★	Milestone Decision Planned ☆	Element Test Complete ◆	Element Test Planned ◇	System Level Test Complete ●	System Level Test Planned ○	Complete Activity ◆	Planned Activity ◇							
											FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Redesigned Kill Vehicle	◆	◆	◆	◆													
Improved Homeland Defense (HD) Interceptor Development	◆	◆	◆	◆													

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD97 / <i>Improved HD Interceptors</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Redesigned Kill Vehicle	1	2019	4	2019
Improved Homeland Defense (HD) Interceptor Development	1	2019	4	2019

Note
 RKV terminated August 2019. Next Generation Interceptor development was realigned to MD80.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Missile Defense Agency										Date: February 2020		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>				Project (Number/Name) MD80 / <i>Next Generation Interceptor Development (NGI)</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
MD80: <i>Next Generation Interceptor Development (NGI)</i>	-	0.000	465.000	637.759	-	637.759	884.785	1,285.581	841.322	1,258.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The increase from FY 2020 to FY 2021 provides two contractors through PDR to develop the NGI.

FY 2020 - FY 2025 funding was realigned and adjusted from MD97 Improved HD Interceptors to MD80 in support of the NGI.

A. Mission Description and Budget Item Justification

The Improved Homeland Defense Interceptor Program Element will deliver an NGI for Homeland Defense. The NGI acquisition covers the development, integration and testing of an AUR boost vehicle/ kill vehicle system capable of surviving both the natural and hostile environments while countering the allocated threats. The NGI will provide the Warfighter a cost-effective solution that is lethal across the specified threat space and extensible to address future and evolving threats. The Government will issue a Request for Proposal in FY 2020 for a NGI acquisition, which covers the development, integration and testing of an AUR boost vehicle/ kill vehicle system. The Government will utilize two contractors through PDR to develop the NGI.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2019	FY 2020	FY 2021
Title: Next Generation Interceptor Development (NGI)	0.000	303.583	628.991
Articles:	-	-	-
Description: The Improved Homeland Defense Interceptor Program Element will deliver a NGI for Homeland Defense. The NGI has improved survivability against natural and hostile environments and increases performance capability against 2030 threats compared to the currently fielded GBIs.			
Specific and/or unique accomplishments to each FY are as follows:			
FY 2020 Plans:			
-Initiate the design, development, and test of NGI payload and the boost vehicle utilizing two prime contractors to provide the Warfighter a cost-effective solution that is lethal across the specified threat space and extensible to address future and evolving threats			
-Initiate System Requirements Review to establish the functional baseline for the NGI design			
FY 2021 Plans:			
-Design, develop, and test the NGI payload and boost vehicle utilizing two prime contractors			

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD80 / <i>Next Generation Interceptor Development (NGI)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2019	FY 2020	FY 2021
<p>-Complete System Requirements Review to establish the functional baseline for the NGI design -Initiate activities to support achieving Knowledge Point #1 exit criteria, successful completion of the Preliminary Design Review. These activities include: --Complete interceptor, boost vehicle and kill vehicle level SRRs --Initiate purchase of NGI parts and initiate testing to gain early confidence in NGI design --Initiate Parts, Materials, and Processes Board Requirements (PMPCB) approval for all parts --Initiate battlespace and threat containment requirement analysis</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: The increase from FY 2020 to FY 2021 provides a ramp-up for two contractors through PDR to develop the NGI. Funding is realigned/adjusted from MD97 to MD80.</p>				
Title: Program Operations		0.000	6.417	8.768
Articles:		-	-	-
<p>Description: Program Operations provides for integrated program management of the Improved HD Interceptor efforts including: -Technical and business management support, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management, and integration activities to ensure the program meets cost, schedule, and performance goals -GMD NGI program compliance with internal and external direction, policies, and regulations to deliver critical capability via a consistent and disciplined process -Mission Assurance and Manufacturing Engineering processes to include quality, configuration management, manufacturing, engineering, and safety in all phases of the system life cycle, throughout the supply chain and at all levels of assembly emphasizing high yield rates which minimize test and rework costs -Technical and testing oversight, verification of hardware and software development, quality / safety / mission assurance, integrated logistics support, and government manpower and infrastructure to develop, test, and sustain the NGI</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2020 Plans: -SEE ABOVE.</p> <p>FY 2021 Plans:</p>				

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD80 / <i>Next Generation Interceptor Development (NGI)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021
-SEE ABOVE.			
FY 2020 to FY 2021 Increase/Decrease Statement: Funding is realigned/adjusted from MD97 to MD80.			
Title: Risk Reduction	0.000	155.000	0.000
Articles:	-	-	-
Description: Risk Reduction for maintaining and enhancing existing homeland defense capabilities against near- and mid-term threats prior to the fielding of NGI.			
FY 2020 Plans: - Execute Risk Reduction funding for maintaining and enhancing existing homeland defense capabilities against near- and mid-term threats prior to the fielding of NGI.			
FY 2021 Plans: N/A			
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease from FY20 to FY21 reflects completion of risk reduction activities funded via congressional add.			
Accomplishments/Planned Programs Subtotals	0.000	465.000	637.759

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0208866C: MD08: <i>BMD Midcourse Defense O&M</i>	139.204	153.218	160.713	-	160.713	164.416	168.170	194.747	179.506	Continuing	Continuing
• 0208866C: MD08: <i>GMD Procurement</i>	520.464	285.471	0.000	-	0.000	0.000	10.225	2.130	36.400	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	790.316	1,303.716	1,004.305	-	1,004.305	776.125	726.566	767.592	1,068.536	Continuing	Continuing
• 0604874C: <i>Improved Homeland Defense Interceptors</i>	407.858	515.000	664.138	-	664.138	921.349	1,339.439	856.712	1,258.000	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD80 / <i>Next Generation Interceptor Development (NGI)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604887C: <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	72.634	98.139	67.071	-	67.071	63.240	61.200	79.139	33.282	Continuing	Continuing

Remarks

D. Acquisition Strategy

Acquisition strategy includes a competitive source selection to develop and test an all up round interceptor to meet Warfighter requirements and defeat the 2030 threat. MDA has established multiple knowledge points to evaluate component and system performance during development. MDA will request production decisions following a successful intercept flight test. The Government will utilize two contractors through Preliminary Design Review (PDR) to develop the NGI.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency **Date:** February 2020

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors	Project (Number/Name) MD80 / Next Generation Interceptor Development (NGI)
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Next Generation Interceptor Development (NGI) - NGI Development	TBD	Competitive Contract Award : TBD	0.000	0.000		302.043	Nov 2019	627.359	Nov 2020	-		627.359	Continuing	Continuing	Continuing
Next Generation Interceptor Development (NGI) - NGI Development Lab & System Support	MIPR	Various : Various	0.000	0.000		1.540	Nov 2019	1.632	Nov 2020	-		1.632	Continuing	Continuing	Continuing
Risk Reduction - Risk Reduction	TBD	Competitive Contract Award : TBD	0.000	0.000		155.000	Apr 2020	0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		458.583		628.991		-		628.991	Continuing	Continuing	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Operations - Contract Support Services	C/CPFF	Various : AL/AK/ CA/ CO/VA	0.000	0.000		4.687	Oct 2019	6.374	Oct 2020	-		6.374	Continuing	Continuing	Continuing
Program Operations - Government Civilian Salaries	MIPR	MDA : AL/VA	0.000	0.000		1.730	Oct 2019	2.394	Oct 2020	-		2.394	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		6.417		8.768		-		8.768	Continuing	Continuing	N/A

Remarks
N/A

Project Cost Totals	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	0.000	465.000	637.759	-	637.759	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency							Date: February 2020			
Appropriation/Budget Activity 0400 / 4			R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>			Project (Number/Name) MD80 / <i>Next Generation Interceptor Development (NGI)</i>				
	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	

Remarks N/A									
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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Missile Defense Agency						Date: February 2020									
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>				Project (Number/Name) MD80 / <i>Next Generation Interceptor Development (NGI)</i>							
Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆	Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇						
Next Generation Interceptor															

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD80 / <i>Next Generation Interceptor Development (NGI)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Next Generation Interceptor	1	2020	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Missile Defense Agency										Date: February 2020		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
MD40: Program Wide Support	40.449	21.880	13.419	26.379	-	26.379	36.564	53.858	15.390	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency PEs each fiscal year based on the total Agency budget, and therefore fluctuates per PE by fiscal year.

A. Mission Description and Budget Item Justification

PWS contains non-headquarters management costs in support of MDA functions and activities across the entire MDS. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the MDS as well as supports MDA in the development and evaluation of technologies that will respond to the changing threat. Additionally, PWS includes personnel to support global deployments performing deployment site preparation and activation, and provides facility capabilities for MDA Executing Agent locations worldwide. Other MDA wide costs include: physical and technical security; civilian drug testing; audit readiness; the Science, Technology, Engineering, and Mathematics (STEM) program; legal services and settlements; travel and agency training; office, equipment, vehicle, and warehouse leases; utilities and base operations across multiple geographic locations; commercial and ancillary facility services; management of all facility aspects regardless of lifecycle stage; supplies and maintenance; compliance with statutory environmental requirements; data and unified communications support; materiel and readiness and central property management of equipment; Facilities Sustainment, Restoration and Modernization (FSRM) program, (formerly Real Property Maintenance) to keep the Department's inventory of facilities in good working order; and similar operating expenses. PWS is allocated on a pro-rata basis across most Agency PEs and therefore fluctuates per PE by fiscal year based on the total Agency budget in that fiscal year.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2019	FY 2020	FY 2021
Title: Program Wide Support	21.880	13.419	26.379
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire MDS. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the MDS as well as supports MDA in the development and evaluation of technologies that will respond to the changing threat. Additionally, PWS includes personnel to support global deployments performing deployment site preparation and activation, and provides facility capabilities for MDA Executing Agent locations worldwide. Other MDA wide costs include: physical and technical security; civilian drug testing; audit readiness; the Science, Technology, Engineering, and Mathematics (STEM) program; legal services and settlements; travel and agency training; office, equipment, vehicle, and warehouse leases; utilities and base operations across multiple geographic locations; commercial and ancillary facility services; management of all facility aspects regardless of lifecycle stage; supplies and maintenance; compliance with statutory environmental requirements; data and unified communications support; materiel and readiness and central property management of equipment; Facilities Sustainment,			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Missile Defense Agency		Date: February 2020		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2019	FY 2020	FY 2021
<p>Restoration and Modernization (FSRM) program, (formerly Real Property Maintenance) to keep the Department's inventory of facilities in good working order; and similar operating expenses. PWS is allocated on a pro-rata basis across most Agency PEs and therefore fluctuates per PE by fiscal year based on the total Agency budget in that fiscal year.</p> <p>FY 2020 Plans: - SEE ABOVE.</p> <p>FY 2021 Plans: - SEE ABOVE.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Decrease from FY 2020 to FY 2021 reflects the PWS allocation on a pro-rata basis across multiple Agency PEs each fiscal year based on the total Agency budget, and therefore fluctuates per PE by fiscal year.</p>				
Accomplishments/Planned Programs Subtotals		21.880	13.419	26.379
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency **Date:** February 2020

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors	Project (Number/Name) MD40 / Program Wide Support
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Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Facilities and Maintenance	MIPR	Various Multi : AL, VA	8.871	14.724	Nov 2018	5.218	Nov 2019	2.492	Nov 2020	-		2.492	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Various	Various Multi : AL, VA	0.424	0.331	Nov 2018	0.201	Nov 2019	1.500	Nov 2020	-		1.500	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various Multi : AL, VA	10.513	4.573	Mar 2019	0.000		4.450	Nov 2020	-		4.450	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various Multi : AL, VA	20.641	2.252	Dec 2018	8.000	Dec 2019	17.937	Dec 2020	-		17.937	Continuing	Continuing	Continuing
Subtotal			40.449	21.880		13.419		26.379		-		26.379	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	40.449	21.880	13.419	26.379	-	26.379	Continuing	Continuing	N/A

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Missile Defense Agency						Date: February 2020									
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>				Project (Number/Name) MD40 / <i>Program Wide Support</i>							
Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆	Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇						
MD40 Program-Wide Support															

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2019	4	2020