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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 0604879C / <i>Ballistic Missile Defense Sensor Test</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	301.791	71.905	105.530	76.456	-	76.456	99.138	131.191	122.983	124.398	Continuing	Continuing
MT11: <i>BMDs Radars Test</i>	289.934	67.093	101.053	73.419	-	73.419	95.204	125.916	116.689	117.612	Continuing	Continuing
MD40: <i>Program Wide Support</i>	11.857	4.812	4.477	3.037	-	3.037	3.934	5.275	6.294	6.786	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Decrease from FY 2020 to FY 2021 reflects Sensors' participation in Missile Defense System (MDS) ground and flight test in accordance with Integrated Master Test Plan (IMTP) 21.1.

A. Mission Description and Budget Item Justification

MDA Sensors executes a robust test program that includes flight and ground tests to support both strategic and regional MDS capabilities against medium- and long-range threats. The Sensors elements of the Missile Defense System (MDS) Integrated Master Test Plan (IMTP) are intended to demonstrate the integrated missile defense capabilities under development to ensure the capabilities delivered to the Warfighter are operationally effective, suitable, and survivable. The Sensors Test Program Element specifically includes the planning, execution, and analysis of flight and ground tests, including the associated infrastructure.

The Sensors Test program provides data required for the Technical Capability Declaration for European Phased Adaptive Approach (EPAA) Phase III Robust Intermediate Range Ballistic Missile (IRBM) Defense, Enhanced Homeland Defense, and Mid-term Discrimination Improvements.

The Sensors Test program supports Long Range Discrimination Radar (LRDR) integration into the MDS, mid and far-term Discrimination Improvements, and Operational Test and Evaluation of the theater/regional and strategic MDS architecture.

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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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>
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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	77.405	105.530	114.698	-	114.698
Current President's Budget	71.905	105.530	76.456	-	76.456
Total Adjustments	-5.500	0.000	-38.242	-	-38.242
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Missile Defeat and Defense Enhancement	0.000	0.000	0.000	-	0.000
• Other Adjustment	-5.500	0.000	-38.242	-	-38.242

Change Summary Explanation

Decrease in FY 2021 reflects flight and ground tests and sensor participation in accordance with IMTP 21.1.

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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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</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
MT11: <i>BMDS Radars Test</i>	289.934	67.093	101.053	73.419	-	73.419	95.204	125.916	116.689	117.612	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2020 to FY 2021 provides Sensor participation in Missile Defense System (MDS) ground and flight tests in accordance with the Integrated Master Test Plan (IMTP) 21.1.

A. Mission Description and Budget Item Justification

This project provides activities for planning, analysis, and execution of BMDS flight test events, including pre- and post-test ground testing such as Digital and Hardware-in-the-Loop (HWIL) System Pre-Mission Tests (SPMTs) and System Post-Flight Reconstruction (SPFR). Sensors Test provides planning, analysis, and execution in accordance with the Ground Test Concept of Operations (CONOPS) supporting the Ground Test level of effort concept for BMDS system level ground tests identified in the IMTP. Test infrastructure funding provides for HWIL labs and program management required to operate and maintain a flight and ground test capability.

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

	FY 2019	FY 2020	FY 2021
Title: Test Resources	17.465	27.851	65.543
Articles:	-	-	-
<p>Description: Test Resources efforts include configuration and maintenance of Sensors HWILs for use in ground test execution (MDS and element developmental testing) and in MDS flight test execution pre-mission testing, and technical oversight to all MDS system level activities with Sensors participation. It also includes conducting the detailed test event planning and design, integration, and execution for all MDS flight and ground test campaigns. Test Resources provides support for evolving Objective Simulation Framework (OSF) (software upgrades) integration into the MDS HWIL ground test execution and flight test execution. Beginning in FY 2021, it also provides a Level of Effort (LOE) support to MDS Ground Tests in accordance with the MDS Integrated Master Test Plan (IMTP) and the new Ground Test Concept of Operations (CONOPS).</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: - SEE ABOVE</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement:</p>			

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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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2019	FY 2020	FY 2021
Increase from FY 2020 to FY 2021 provides for the transfer of the Ground Test Execution accomplishment to the Test Resources accomplishment in FY 2021. It also provides for Sensors participation in MDS flight and ground tests in accordance with the IMTP 21.1.				
Title: Flight Test Execution		23.163	41.392	7.876
		Articles:	-	-
Description: Flight Test Execution includes test planning, pre-flight analysis, transportation of radars, test execution, and post-flight analysis for Sensors' participation in MDS flight tests in accordance with the MDS IMTP.				
Specific and/or unique accomplishments to each FY are as follows:				
FY 2020 Plans: - SEE ABOVE				
FY 2021 Plans: - SEE ABOVE				
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease from FY 2020 to FY 2021 reflects Sensors participation in BMDS flight tests in accordance with the IMTP 21.1.				
Title: Ground Test Execution		26.465	31.810	0.000
		Articles:	-	-
Description: Ground Test Execution includes event planning, asset integration, execution and post-mission analysis for Sensors' participation in MDS ground tests in accordance with the MDS IMTP. Specific and/or unique accomplishments to each FY are as follows:				
FY 2020 Plans: - Plan and execute Sensors' participation in MDS Ground Tests in accordance with IMTP and the new Ground Test Concept of Operations (CONOPS)				
FY 2021 Plans: -N/A				
FY 2020 to FY 2021 Increase/Decrease Statement:				

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021
Decrease from FY 2020 to FY 2021 reflects the transfer of the Ground Test Execution accomplishment to the Test Resources accomplishment in FY 2021.			
Accomplishments/Planned Programs Subtotals	67.093	101.053	73.419

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

Line Item	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
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	382.759	352.288	281.957	-	281.957	576.699	656.539	574.703	593.592	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	500.965	549.756	593.353	-	593.353	593.330	546.471	581.376	543.971	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	48.401	51.532	49.560	-	49.560	51.735	51.059	53.133	54.023	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	51.689	56.161	55.356	-	55.356	55.721	57.457	59.798	61.334	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	125.900	128.156	118.318	-	118.318	135.931	131.510	145.582	169.980	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
• 0604672C: <i>Homeland Defense Radar-Hawaii</i>	70.735	188.480	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	259.215
• 0604673C: <i>Pacific Discriminating Radar</i>	14.453	6.711	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.164
• 0604873C: <i>Long Range Discrimination Radar (LRDR)</i>	172.705	136.423	137.256	-	137.256	118.787	90.299	60.251	41.726	Continuing	Continuing

Remarks

D. Acquisition Strategy

Test & Evaluation projects use multiple existing development and MDS test contracts depending on the system(s) involved in the testing.

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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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

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			
Test Resources - AN/TPY-2, SBX, UEWR & CD OSF Integration & Infrastructure, Sys Test Lab	C/CPAF	Raytheon : MA	53.097	12.792	Dec 2018	10.112	Nov 2019	39.021	Nov 2020	-		39.021	Continuing	Continuing	Continuing
Test Resources - Civilians/Travel	Allot	MDA : AL/VA	0.000	0.000		5.086	Oct 2019	5.640	Oct 2020	-		5.640	Continuing	Continuing	Continuing
Test Resources - Contract Support Services	Various	Various : Various	0.000	0.000		3.083	Oct 2019	3.616	Oct 2020	-		3.616	Continuing	Continuing	Continuing
Test Resources - Cyber Win10 Implementation - MDDC Lab Analysis Infrastructure	C/IDIQ	Analytical Services, Inc. : AL	0.825	0.000		0.000		0.000		-		0.000	0.000	0.825	0.000
Test Resources - Cybersecurity - BGTC and SBIRS	C/IDIQ	Northrop Grumman Space & Mission System : CO	1.600	0.000		0.000		0.000		-		0.000	0.000	1.600	0.000
Test Resources - Cybersecurity - Tactical Communication Environment Segment (TCES)	MIPR	SPAWAR : CA	0.190	0.000		0.000		0.000		-		0.000	0.000	0.190	0.000
Test Resources - General Infrastructure and OGA Support	Various	Various : AL, NM	0.000	3.293	Oct 2018	0.000		4.471	Nov 2020	-		4.471	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Test Resources - LRDR OSF Integration & Infrastructure, Sys Test Lab	SS/FFP	Lockheed Martin : NJ	0.000	1.380	Jan 2019	9.570	Jan 2020	12.795	Nov 2020	-		12.795	Continuing	Continuing	Continuing
Test Resources - UEWR SSF Integration & Infrastructure, Sys Test Lab	C/FPIF	deciBel : AL	14.655	0.000		0.000		0.000		-		0.000	0.000	14.655	0.000
Flight Test Execution - AN/TPY-2, SBX UEWR & CD MDS Level Testing	C/CPAF	Raytheon : MA	109.340	15.230	Mar 2019	40.142	Mar 2020	3.157	Nov 2020	-		3.157	Continuing	Continuing	Continuing
Flight Test Execution - FT Security, Site Activation & Deployments MDS Level Testing	Various	Various : AI, CO, HI, Wake Island	31.508	1.963	Oct 2018	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Flight Test Execution - LRDR MDS Level Testing	SS/TBD	Lockheed Martin : NJ	0.032	0.000		0.200	Jun 2020	4.204	Nov 2020	-		4.204	Continuing	Continuing	Continuing
Flight Test Execution - OGA Sensor Research & Development	MIPR	Secretary of the Air Force : NCR	0.000	4.500	Aug 2019	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Flight Test Execution - System-Level Post Flight Reconstruction (SPFR)	MIPR	CCDC AVMC : AL	0.000	1.470	Nov 2018	1.050	Jun 2020	0.515	Jun 2021	-		0.515	Continuing	Continuing	Continuing
Flight Test Execution - UEWR/CD MDS Level Testing	C/FPIF	deciBel : AL	1.152	0.000		0.000		0.000		-		0.000	0.000	1.152	0.000
Ground Test Execution - AN/TPY-2, SBX, UEWR/CD MDS Level Testing	C/CPAF	Raytheon : MA	77.535	26.465	Feb 2019	31.810	Feb 2020	0.000		-		0.000	0.000	135.810	0.000
Subtotal			289.934	67.093		101.053		73.419		-		73.419	Continuing	Continuing	N/A

Remarks
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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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Management Services (\$ 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

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	289.934	67.093	101.053	73.419	-	73.419	Continuing	Continuing	N/A

Remarks
Award Dates reflect 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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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	Significant Event Complete ▲		Milestone Decision Complete ★		Element Test Complete ◆		System Level Test Complete ●		Complete Activity ◆		System Level Test Planned ○		Planned Activity ◇	
	Significant Event Planned △		Milestone Decision Planned ☆		Element Test Planned ◇		System Level Test Planned ○		Complete Activity ◆		System Level Test Planned ○		Planned Activity ◇	
	FY 2019		FY 2020		FY 2021		FY 2022		FY 2023		FY 2024		FY 2025	
FTI-03 (OTA, OT Intercept Flight Test)	▲													
FTG-11 (OT) (GM, OT Intercept Flight Test)		▲												
FTT-23 (TH, DT Intercept Flight Test)			▲											
GTI-07c (N/I) (BMDS Ground Test)				◆										
FTM-44 (AEGIS 5.1, DT Intercept Flight Test)					△									
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)						△								
TH CTV-01 (LTPO, DT Interceptor Only Flight Test)							△							
GTI-09 Sprint 1 (E/C) (BMDS Ground Test)								◇						
FTT-21 (TH, DT Intercept Flight Test)								△						
GTI-21 Sprint 1 (JEON) TH 4.0 (BMDS Ground Test)								◇						
GTD-08a (N/I) (BMDS Ground Test)								◇	◇					
FTX-26 (OT) (SN, OT Target Only Flight Test)									△					
GTI-09 Sprint 2 (E/C) (BMDS Ground Test)									○					
GTI-ISR (21) (BMDS Ground Test)									◇					
GTD-09 (E/C) (BMDS Ground Test)									○					
GTI-08b Sprint 1 (N/I) (BMDS Ground Test)									◇					
GTI-10 Sprint 1 (E/C) (BMDS Ground Test)										○				
FTT-25 (TH Intercept Flight Test)										△				
GTI-ASI (22)										◇				
GTI-08b Sprint 2 (N/I) (BMDS Ground Test)										◇				
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)											△			
GTD-08b (N/I) (BMDS Ground Test)											◇			
FTX-23 (AEGIS 5.1, DT Target Only Flight Test)												△		
GTI-10 Sprint 2 (E/C) (BMDS Ground Test)												○		

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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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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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 ◇

	FY 2019			FY 2020			FY 2021			FY 2022			FY 2023			FY 2024			FY 2025		
GTI-11 Sprint 1 (N/I) (BMDS Ground Test)													◇	◇							
FTT-24 (TH, DT Intercept Flight Test)														△							
GTD-10 (E/C) (BMDS Ground Test)														○							
GTI-11 Sprint 2 (N/I) (BMDS Ground Test)														◇	◇						
FTX-28 E1-E3 (TH, DT Target Only Flight Test)															△						
GTD-11 (N/I) (BMDS Ground Test)															◇						
GTI-ISR (23) (BMDS Ground Test)															◇						
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)															△						
GTI-12 Sprint 1 (E/C) (BMDS Ground Test)																○					
GTI-ASI (24) (BMDS Ground Test)																	◇				
FTM-41 (AEGIS BL 10 (BMD 6.0) Tests																		△			
GTI-12 Sprint 2 (E/C) (BMDS Ground Test)																		○			
FTT-22 (TH Intercept Flight Test)																			△		
GTI-13 Sprint 1 (N/I) (BMDS Ground Test)																				◇	
FTO-04 (GM, OT Intercept Flight Test)																					△
GTI-13 Sprint 2 (N/I) (BMDS Ground Test)																					◇
GTI-ISR (25) (BMDS Ground Test)																					◇
FTM-39 (AEGIS 5.1, OT Intercept Flight Test)																					△
FTM-42 (AEGIS 5.1, DT/OT Intercept Flight Test)																					△
FTM-35 (Aegis BL9 FOT&E)																					
GTD-12 (E/C) (BMDS Ground Test)																					
GTI-ASI (26) (BMDS Ground Test)																					
FTO-05 (OTA, OT Intercept Flight Test)																					

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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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTI-03 (OTA, OT Intercept Flight Test)	1	2019	1	2019
FTG-11 (OT) (GM, OT Intercept Flight Test)	2	2019	2	2019
FTT-23 (TH, DT Intercept Flight Test)	4	2019	4	2019
GTI-07c (N/I) (BMDS Ground Test)	1	2020	1	2020
FTM-44 (AEGIS 5.1, DT Intercept Flight Test)	3	2020	3	2020
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2020	4	2020
TH CTV-01 (LTPO, DT Interceptor Only Flight Test)	1	2021	1	2021
GTI-09 Sprint 1 (E/C) (BMDS Ground Test)	2	2021	2	2021
FTT-21 (TH, DT Intercept Flight Test)	2	2021	2	2021
GTI-21 Sprint 1 (JEON) TH 4.0 (BMDS Ground Test)	2	2021	2	2021
GTD-08a (N/I) (BMDS Ground Test)	2	2021	3	2021
FTX-26 (OT) (SN, OT Target Only Flight Test)	3	2021	3	2021
GTI-09 Sprint 2 (E/C) (BMDS Ground Test)	3	2021	3	2021
GTI-ISR (21) (BMDS Ground Test)	4	2021	4	2021
GTD-09 (E/C) (BMDS Ground Test)	4	2021	4	2021
GTI-08b Sprint 1 (N/I) (BMDS Ground Test)	1	2022	1	2022
GTI-10 Sprint 1 (E/C) (BMDS Ground Test)	3	2022	3	2022
FTT-25 (TH Intercept Flight Test)	3	2022	3	2022
GTI-ASI (22)	3	2022	3	2022
GTI-08b Sprint 2 (N/I) (BMDS Ground Test)	3	2022	3	2022
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)	4	2022	4	2022
GTD-08b (N/I) (BMDS Ground Test)	4	2022	4	2022

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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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FTX-23 (AEGIS 5.1, DT Target Only Flight Test)	1	2023	1	2023
GTI-10 Sprint 2 (E/C) (BMDS Ground Test)	1	2023	1	2023
GTI-11 Sprint 1 (N/I) (BMDS Ground Test)	2	2023	3	2023
FTT-24 (TH, DT Intercept Flight Test)	3	2023	3	2023
GTD-10 (E/C) (BMDS Ground Test)	3	2023	3	2023
GTI-11 Sprint 2 (N/I) (BMDS Ground Test)	3	2023	4	2023
FTX-28 E1-E3 (TH, DT Target Only Flight Test)	4	2023	4	2023
GTD-11 (N/I) (BMDS Ground Test)	4	2023	4	2023
GTI-ISR (23) (BMDS Ground Test)	4	2023	4	2023
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2023	4	2023
GTI-12 Sprint 1 (E/C) (BMDS Ground Test)	1	2024	1	2024
GTI-ASI (24) (BMDS Ground Test)	2	2024	2	2024
FTM-41 (AEGIS BL 10 (BMD 6.0) Tests)	3	2024	3	2024
GTI-12 Sprint 2 (E/C) (BMDS Ground Test)	3	2024	3	2024
FTT-22 (TH Intercept Flight Test)	3	2024	3	2024
GTI-13 Sprint 1 (N/I) (BMDS Ground Test)	4	2024	4	2024
FTO-04 (GM, OT Intercept Flight Test)	1	2025	1	2025
GTI-13 Sprint 2 (N/I) (BMDS Ground Test)	2	2025	2	2025
GTI-ISR (25) (BMDS Ground Test)	2	2025	3	2025
FTM-39 (AEGIS 5.1, OT Intercept Flight Test)	4	2025	4	2025
FTM-42 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2025	4	2025
FTM-35 (Aegis BL9 FOT&E)	1	2026	1	2026
GTD-12 (E/C) (BMDS Ground Test)	1	2026	1	2026
GTI-ASI (26) (BMDS Ground Test)	3	2026	3	2026
FTO-05 (OTA, OT Intercept Flight Test)	4	2026	4	2026

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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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>

Note
FY 2020 United States Indo-Pacific Command (USINDOPACOM) Joint Emerging Operational Needs (JEON) tests are funded in Program Element (PE) 0603914C BMD Test.

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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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>				Project (Number/Name) MD40 / <i>Program Wide Support</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
MD40: <i>Program Wide Support</i>	11.857	4.812	4.477	3.037	-	3.037	3.934	5.275	6.294	6.786	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	4.812	4.477	3.037
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 0604879C / <i>Ballistic Missile Defense Sensor Test</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
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.			
<i>FY 2020 Plans:</i> - SEE ABOVE.			
<i>FY 2021 Plans:</i> - SEE ABOVE.			
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> N/A			
Accomplishments/Planned Programs Subtotals	4.812	4.477	3.037

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 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>
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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 Operations Management	Various	Various : Multi: AL, VA	0.242	1.950	Jul 2019	0.067	Jul 2020	0.092	Jul 2021	-		0.092	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	MIPR	Various : Multi: AL, VA	11.615	2.862	Feb 2019	4.410	Jul 2020	2.945	Jul 2021	-		2.945	Continuing	Continuing	Continuing
Subtotal			11.857	4.812		4.477		3.037		-		3.037	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	11.857	4.812	4.477	3.037	-	3.037	Continuing	Continuing	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 0604879C / <i>Ballistic Missile Defense Sensor Test</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 ◇	
						FY 2019		FY 2020		FY 2021		FY 2022		FY 2023		FY 2024		FY 2025	
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 0604879C / <i>Ballistic Missile Defense Sensor Test</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	2025