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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Missile Defense Agency	Date: March 2019
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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 0604887C I <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>
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COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	194.423	85.030	72.634	98.139	-	98.139	91.955	116.709	110.937	101.103	Continuing	Continuing
MT08: <i>Midcourse Test</i>	188.594	81.776	69.011	95.231	-	95.231	88.351	113.656	107.317	97.553	Continuing	Continuing
MD40: <i>Program Wide Support</i>	5.829	3.254	3.623	2.908	-	2.908	3.604	3.053	3.620	3.550	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from FY 2019 to FY 2020 reflects the realignment of test related funding from the Ballistic Missile Defense Midcourse Segment (0603882C) to this PE for flight test execution and analysis. Also, provides ground test Continuous Development, Continuous Integration and Continuous Agile Testing (CIT/CAT). Ground testing was previously performed sequentially but will now be performed in parallel to reduce the test cycle time, with periods of 3 lab-based activities simultaneously. These new sequential test flows require additional test teams, off shift work to de-conflict assets and network infrastructure, and additional data packages and test reviews. In addition, the increase provides for new Cybersecurity testing events which will use a crawl, walk, run approach for each future GMD Ground Systems build which will require earlier and additional installation and checkout in the labs to support earlier learning, feedback to the product development team, and final evaluation of cyber capability prior to operational cyber testing.

A. Mission Description and Budget Item Justification

Ballistic Missile Defense Midcourse Defense Segment Test provides flight and ground testing of GMD functionality to demonstrate Enhanced Homeland Defense capabilities against long-range threats. The GMD components are tested in an integrated environment with BMDS sensors; C2BMC; Warfighters; and national collection assets to assess the ability to defend the United States and its territories against ballistic missile attack.

Primary programs include Resource's, Flight Test Execution, Ground Test Execution and Program Operations for which detailed descriptions and accomplishments are provided in section B.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Missile Defense Agency				Date: March 2019	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0604887C I Ballistic Missile Defense Midcourse Defense Segment Test			
B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	76.757	81.934	95.458	-	95.458
Current President's Budget	85.030	72.634	98.139	-	98.139
Total Adjustments	8.273	-9.300	2.681	-	2.681
• Congressional General Reductions	0.000	-9.300			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	9.300	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.027	0.000			
• Missile Defeat and Defense Enhancement	0.000	0.000	0.000	-	0.000
• Other Adjustment	-1.000	0.000	2.681	-	2.681
Change Summary Explanation					
Increase in FY 2018 from PB19 to PB20 reflects the enacted congressional adjustment of +\$9.300M for an additional 20 GBIs.					
Decrease in FY 2019 from PB19 to PB20 reflects the congressional adjustment for forward financing in FY 2018.					
Increase in FY 2020 from PB19 to PB20 reflects the realignment of test funding previously budgeted in Ballistic Missile Defense Midcourse Segment (0603882C) for flight test execution and analysis.					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2020 Missile Defense Agency										Date: March 2019		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test				Project (Number/Name) MT08 / Midcourse Test			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
MT08: Midcourse Test	188.594	81.776	69.011	95.231	-	95.231	88.351	113.656	107.317	97.553	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2019 to FY 2020 reflects the realignment of test related funding from the Ballistic Missile Defense Midcourse Segment (0603882C) to this PE for flight test execution and analysis. Also, provides ground test Continuous Development, Continuous Integration and Continuous Agile Testing (CIT/CAT). Ground testing was previously performed sequentially but will now be performed in parallel to reduce the test cycle time, with periods of 3 lab-based activities simultaneously. These new sequential test flows require additional test teams, off shift work to de-conflict assets and network infrastructure, and additional data packages and test reviews. In addition, the increase provides for new Cybersecurity testing events which will use a crawl, walk, run approach for each future GMD Ground Systems build which will require earlier and additional installation and checkout in the labs to support earlier learning, feedback to the product development team, and final evaluation of cyber capability prior to operational cyber testing.

A. Mission Description and Budget Item Justification

Ballistic Missile Defense Midcourse Defense Segment Test provides flight and ground testing of GMD functionality to demonstrate Enhanced Homeland Defense capabilities against long-range threats. The GMD components are tested in an integrated environment with BMDS sensors; C2BMC; Warfighters; and national collection assets to assess the ability to defend the United States and its territories against ballistic missile attack.

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

	FY 2018	FY 2019	FY 2020
Title: Resources	19.518	23.560	20.791
Articles:	-	-	-
<p>Description: Provides support associated with day-to-day operations of the flight and ground test programs to include engineering support for ground test planning, execution, and post-event reconstruction.</p> <p>Recurring work: provides test infrastructure and coordination of flight test range support from Vandenberg Air Force Base (VAFB), California, for all range activities, engineering, operators and GBI transportation; provides command and control and situational awareness for the GMD flight and ground test events at the MDA Integration and Operations Center (MDIOC) in Colorado Springs, Colorado and the Readiness and Control Facility (R&C) in Ft. Greely, Alaska; provides test communication plans, test communication control, satellite communication bandwidth, test network certification and accreditation for GMD flight and ground tests to integrate the range in VAFB, California, MDIOC in Colorado Springs, Colorado, Ft. Greely, Alaska and Pacific Missile Range Facility (PMRF) in Hawaii; provides engineering, operations and maintenance of the integrated system test labs in Huntsville, Alabama, to conduct BMDS flight test pre-mission risk reduction and system level ground testing for fielding warfighter capabilities that defend the homeland; provides operations and maintenance and equipment upgrades of the Prime Consolidated Integration Lab (PCIL) in Huntsville, Alabama to support flight test pre-mission risk reduction and post-flight reconstruction to</p>			

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2018	FY 2019	FY 2020
provide confidence in models and simulations used for evaluation of performance of GMD homeland defense capabilities; and provides equipment upgrades at VAFB and the MDIOC to test support systems. Specific and/or unique accomplishments to each FY are as follows: FY 2019 Plans: See above for recurring efforts. -Support and execute a new BMDS test process and capability called Continuous Integration/Continuous Agile Testing(CI/CAT) to conduct system level integrated ground testing allowing more find and fix opportunities, and increased flexibility to meet agency additional Hard-Ware-In-the-Loop (HWIL) events -Support and execute Cybersecurity Testing per DOT&E requirement for Cooperative Vulnerability and Penetration Assessment (CV PA) and Adversarial Assessment (AA) to support operational acceptance for BMDS weapon system fielding -Support and execute internal test events in both the laboratory and field environments to test incident response procedures, cyber resiliency capabilities, and vulnerability assessments FY 2020 Plans: -Support and execute external test events at various locations per DOT&E requirement for data collection on external test events to support evaluation of performance of GMD homeland defense capabilities -Support and execute internal test events in both the laboratory and field environments to test incident response procedures, cyber resiliency capabilities, and vulnerability FY 2019 to FY 2020 Increase/Decrease Statement: Decrease from FY 2019 to FY 2020 reflects completion of Salvo intercept test requirements to support multiple interceptors resulting in reductions in range support for mission execution, safety systems, and data collectors.					
Title: Flight Test Execution			42.264	29.701	54.787
Articles:			-	-	-
Description: Flight tests demonstrate the capabilities and/or phenomenology that cannot be adequately tested or obtained during ground testing. Flight tests also provide opportunities to test actual hardware and to demonstrate BMDS Element interoperability under operationally realistic conditions. Specific and/or unique accomplishments to each FY are as follows: FY 2019 Plans: -Conduct Flight Test Ground-based Midcourse Defense-11 (FTG-11), a 3-stage CE-II Block I and 3-stage CE-II Salvo intercept using GBIs launched from VAFB, against an Intercontinental Ballistic Missile (ICBM) target with associated objects, launched from Reagan Test Site (RTS) to test operational realism of the GMD salvo capability. Salvo intercept test requires additional resources					

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test	Project (Number/Name) MT08 / Midcourse Test		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2018	FY 2019	FY 2020
from previous missions to support multiple interceptors: additional range support for mission execution and safety systems, silo refurbishment of two silos, additional data collectors, and additional post mission analyses -Initiate planning of range and data collection assets for Flight Test Ground-based Midcourse Defense Booster Verification Test 03 (BVT-03), a mission in support of 2- or 3-Stage selectable boost vehicle software that will provide additional engagement battlespace to the warfighter using a GBI launched from VAFB, California FY 2020 Plans: -Conduct Flight Test Ground-based Midcourse Defense Flight Test, BVT-03, a mission in support of 2- or 3-Stage selectable boost vehicle software that will provide additional engagement battlespace to the warfighter using a GBI launched from VAFB, California FY 2019 to FY 2020 Increase/Decrease Statement: Increase from FY 2019 to FY 2020 reflects the realignment of test related funding from the Ballistic Missile Defense Midcourse Segment (0603882C) to this PE for flight test execution and analysis. Additionally, increase provides for silo refurbishment after FTG-11.				
Title: Ground Test Execution <div>Articles:</div> Description: Ground tests demonstrate and validate Warfighter tactics, techniques, and procedures. Ground tests are executed both in the Hardware-in-the-loop (HWIL) lab and in the field. HWIL lab tests integrate and assess BMDS system-level performance based on new element capabilities. Ground tests in the field use existing fielded element assets and tactical communication networks, to integrate, assess and demonstrate the element capabilities. Specific and/or unique accomplishments to each FY are as follows: FY 2019 Plans: -Support execution of GTI-18 Sprint 3 (N/P) and GTI-19 Sprint 1 (N/P) and GTD-07b to assess BMDS capabilities and the mission functionality of the GMD GS version 7A BMDS capabilities for Future Sensor Utilization and GS Technology Refresh -Support planning and integration of Warfighter TP 07b, 14-day Trial Period following the GTD-07b, to allow the new software to soak on the operational system ensuring that there are no degrading effects or anomalies that were not identified in previous testing. -Support planning, integration and execution of GTI-07c (NORTHCOM/PACOM) (N/P) to support fielding of the GMD Increment 6B capability with GS 8 early integration. -Support planning of GTI-08 (N/P) to assess BMDS-level interoperability with maturing Element capabilities, asset allocations, and geographical content (GS 8 and other BMDS elements software) FY 2020 Plans: -Support planning, integration, execution and analysis of GTI-07c (NORTHCOM/PACOM) (N/P);		9.279 -	5.777 -	9.965 -

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2018		FY 2019		FY 2020	
<p>-Support planning, integration, and initial execution of GTI-08 (NORTHCOM/PACOM) (N/P) to assess BMDS-level interoperability with maturing Element capabilities, asset allocations, and geographical content (GS 8 and other BMDS elements software)</p> <p>-Support early planning of GTD-08 (N/P) with GMD Increment 6B capability with GS 8</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement:</p> <p>Increase from FY 2019 to FY 2020 provides the new ground test Continuous Development, CIT and CAT effort which will reduce the test cycle time. Additional funding is required for new Cyber Security testing events which will require earlier and additional installation and checkout in the labs to support earlier learning, feedback to the product development team, and final evaluation of cyber capability prior to operational cyber testing.</p>													
<p>Title: Program Operations</p> <p>Articles:</p> <p>Description: Program Operations provides for government management of the GMD Test program. This effort includes program and business management support activities, financial management, cost and schedule performance analyses, cost estimation and analyses, configuration management, and integration. It also includes activities to provide critical program status and decision quality data and GMD test program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process and technical and testing oversight, quality/safety/mission assurance, integrated logistics support, and government manpower and infrastructure to test the GMD system and components. Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2019 Plans:</p> <p>- SEE ABOVE.</p> <p>FY 2020 Plans:</p> <p>- SEE ABOVE.</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement:</p> <p>N/A</p>								10.715 -		9.973 -		9.688 -	
Accomplishments/Planned Programs Subtotals								81.776		69.011		95.231	
C. Other Program Funding Summary (\$ in Millions)													
Line Item		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost	
• 0203882C: MD08: GMD O&M		138.751	139.204	153.218	-	153.218	146.614	159.376	165.746	165.790	Continuing	Continuing	

UNCLASSIFIED

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	1,153.263	803.359	1,156.506	-	1,156.506	829.451	766.237	834.533	776.671	Continuing	Continuing
• 0603882C: MD08: GMD Procurement	268.000	532.600	9.471	-	9.471	323.466	532.975	467.001	244.663	Continuing	Continuing
• 0603914C: Ballistic Missile Defense Test	406.806	515.897	395.924	-	395.924	417.946	335.481	451.723	405.136	Continuing	Continuing
• 0603915C: Ballistic Missile Defense Targets	512.838	561.352	554.171	-	554.171	513.964	439.826	358.018	276.108	Continuing	Continuing
• 0604874C: Improved Homeland Defense (HLD) Interceptors	742.842	421.820	412.363	-	412.363	326.922	197.386	137.553	86.423	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
GMD awarded a competitive Development and Sustainment Contract (DSC) on December 30, 2011. This contract included development, fielding, test, systems engineering, integration, and configuration management; equipment manufacturing and upgrade; training, operations and sustainment of the GMD system and associated support facilities.											
In January of 2018 the MDA Director approved the extension of the DSC to execute the Missile Defeat and Defense Enhancement scope (20 silos and 20 GBIs). On January 31, 2018, the DSC Extension was awarded to the Boeing Company with a period of performance through Q1 FY2024. In addition to the MDDE requirements, the DSC Extension also includes supporting test, engineering, software, and performance based logistics scope. The DSC structure breaks out major efforts into separate Contract Line Item Numbers with individual incentives for management insight, accounting and property accountability.											
GM is also implementing a more robust Program Board structure allowing more Government insight and decisions into the technical baseline and has changed business processes for greater Government involvement in Program decisions. In addition, GM utilizes Government laboratory modeling & simulation, and analysis capabilities to augment Boeing's efforts.											
E. Performance Metrics											
N/A											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Missile Defense Agency												Date: March 2019			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>						Project (Number/Name) MT08 / <i>Midcourse Test</i>			
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Program Operations - Contract Support Services	C/CPFF	Various AL/AK/ : CA/ CO/VA	5.000	6.057	Oct 2017	4.994	Oct 2018	4.882	Oct 2019	-		4.882	Continuing	Continuing	Continuing
Program Operations - Government Civilian Salaries	MIPR	MDA AL/ : VA	4.280	4.658	Oct 2017	4.979	Oct 2018	4.806	Oct 2019	-		4.806	Continuing	Continuing	Continuing
Program Operations - Range, Resources, and Engineering	C/CPAF	Various : AL/AK/CA/ CO/VA	0.000	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			9.280	10.715		9.973		9.688		-		9.688	Continuing	Continuing	N/A
Remarks N/A															
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Resources - Cyber Security - Advanced Research Center Cyber Support	C/IDIQ	COLSA Corp : AL	4.162	0.000		0.000		0.000		-		0.000	0.000	4.162	0.000
Resources - Cyber Security - NSITE/GT Communications	MIPR	Aviation & Missile Research & Development : AL	0.138	0.000		0.000		0.000		-		0.000	0.000	0.138	0.000
Resources - Cyber Win10 Implementation - MDDC Lab Analysis Infrastructure	C/IDIQ	Analytical Services, In. : AI	1.449	0.000		0.000		0.000		-		0.000	0.000	1.449	0.000
Resources - Engineering & Analysis - Industry Support	C/CPAF	Boeing : AL	4.221	0.000		0.000		0.000		-		0.000	0.000	4.221	0.000
Resources - Engineering & Analysis - OGA Support	MIPR	AMRDEC : AL	4.098	0.000		0.000		0.000		-		0.000	0.000	4.098	0.000
Resources - Government Infrastructure	MIPR	VAFB : CA/AL/CO	17.903	8.191	Nov 2017	8.257	Nov 2018	9.625	Nov 2019	-		9.625	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Missile Defense Agency												Date: March 2019			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test				Project (Number/Name) MT08 / Midcourse Test					
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Support, Labs, and Communications															
Resources - Prime Infrastructure Support, Labs, and Communications	C/CPAF	Boeing : AL/AK/AZ/CA/CO/OR/TX/VA	21.939	11.327	Nov 2017	15.303	Nov 2018	11.166	Nov 2019	-		11.166	Continuing	Continuing	Continuing
Flight Test Execution - Planning and Silo Refurbishment	C/CPAF	Boeing : AL/AK/AZ/CA/CO/OR/TX/VA	69.424	31.610	Nov 2017	7.127	Nov 2018	30.899	Nov 2019	-		30.899	Continuing	Continuing	Continuing
Flight Test Execution - Range, Resources, and Engineering	MIPR	VAFB/PMRF : CA/HI	38.806	10.654	Nov 2017	22.574	Nov 2018	23.888	Nov 2019	-		23.888	Continuing	Continuing	Continuing
Ground Test Execution - Cybersecurity Testing	C/CPFF	Various : Various	0.000	4.300	Nov 2017	0.000		6.320	Nov 2019	-		6.320	Continuing	Continuing	Continuing
Ground Test Execution - Ground Test Sprints	C/CPFF	Various : Various	0.000	0.000		1.000	Nov 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Ground Test Execution - Ground Test-04 Campaign	C/CPAF	Boeing : AL/AK/AZ/CA/CO/TX/VA	3.355	0.000		0.000		0.000		-		0.000	0.000	3.355	0.000
Ground Test Execution - Ground Test-06 Campaign	C/CPAF	Boeing : AL/AK/AZ/CA/CO/TX/VA	8.163	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Ground Test Execution - Ground Test-07 Campaign	C/CPAF	Boeing : AL/AK/AZ/CA/CO/TX/VA	5.656	4.888	Nov 2017	4.777	Nov 2018	0.138	Nov 2019	-		0.138	Continuing	Continuing	Continuing
Ground Test Execution - Ground Test-08 Campaign	C/CPAF	Boeing : AL/AK/AZ/CA/CO/TX/VA	0.000	0.091	Nov 2017	0.000		3.507	Nov 2019	-		3.507	Continuing	Continuing	Continuing
Subtotal			179.314	71.061		59.038		85.543		-		85.543	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			188.594	81.776		69.011		95.231		-		95.231	Continuing	Continuing	N/A

UNCLASSIFIED

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	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.									

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Missile Defense Agency														Date: March 2019															
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test										Project (Number/Name) MT08 / Midcourse Test													
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 2018		FY 2019		FY 2020		FY 2021		FY 2022		FY 2023		FY 2024											
GTD-07a (N/P) (BMDS Ground Test)						◆																							
GT-18 Sprint 2								◆																					
FTG-11 DT, OT Intercept Flight Test									◇																				
GT-18 Sprint 3									◇																				
GT-19 Sprint 1 (N/P) (BMDS Ground Test)										◇																			
GTI-07c (N/P) (BMDS Ground Test)											◇																		
GM BVT-03 (GM, DT Interceptor Only Flight Test)												△																	
GTI-08 (N/P) (BMDS Ground Test)												◇	◇																
GTD-08 (N/P) (BMDS Ground Test)													◇																
Warfighter TP 08 (BMDS Ground Test)														◇															
FTX-26 (OT) (SN, OT Target Only Flight Test)														△															
GM CTV-03+ (GM, DT Interceptor Only Flight Test)															△														
GTI-11 Sprint 1 (N/P) (BMDS Ground Test)															◇														
FTG-17 (GM, DT Intercept Flight Test)																	△												
GTI-11 Sprint 2 (N/P) (BMDS Ground Test)																◇													
GTI-11 Sprint 3 (N/P) (BMDS Ground Test)																		◇											
GTD-11 (N/P) (BMDS Ground Test)																			◇	◇									
Warfighter TP 11 (BMDS Ground Test)																			◇	◇	◇	◇							
Warfighter TP 13 (BMDS Ground Test)																			◇	◇	◇	◇	◇						
FTG-18 (GM, DT/OT Intercept Flight Test)																				△									
GTI-13 Sprint 1 (N/P) (BMDS Ground Test)																								◇					

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Missile Defense Agency			Date: March 2019
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment Test</i>	Project (Number/Name) MT08 / <i>Midcourse Test</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTD-07a (N/P) (BMDS Ground Test)	1	2018	1	2018
GT-18 Sprint 2	4	2018	4	2018
FTG-11 DT, OT Intercept Flight Test	2	2019	2	2019
GT-18 Sprint 3	2	2019	2	2019
GT-19 Sprint 1 (N/P) (BMDS Ground Test)	3	2019	3	2019
GTI-07c (N/P) (BMDS Ground Test)	1	2020	1	2020
GM BVT-03 (GM, DT Interceptor Only Flight Test)	4	2020	4	2020
GTI-08 (N/P) (BMDS Ground Test)	4	2020	1	2021
GTD-08 (N/P) (BMDS Ground Test)	2	2021	2	2021
Warfighter TP 08 (BMDS Ground Test)	3	2021	3	2021
FTX-26 (OT) (SN, OT Target Only Flight Test)	3	2021	3	2021
GM CTV-03+ (GM, DT Interceptor Only Flight Test)	2	2022	2	2022
GTI-11 Sprint 1 (N/P) (BMDS Ground Test)	3	2022	3	2022
FTG-17 (GM, DT Intercept Flight Test)	1	2023	1	2023
GTI-11 Sprint 2 (N/P) (BMDS Ground Test)	1	2023	1	2023
GTI-11 Sprint 3 (N/P) (BMDS Ground Test)	3	2023	3	2023
GTD-11 (N/P) (BMDS Ground Test)	4	2023	1	2024
Warfighter TP 11 (BMDS Ground Test)	4	2023	3	2024
Warfighter TP 13 (BMDS Ground Test)	4	2023	4	2025
FTG-18 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024
GTI-13 Sprint 1 (N/P) (BMDS Ground Test)	3	2024	3	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Missile Defense Agency		Date: March 2019
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	Project (Number/Name) MT08 / <i>Midcourse Test</i>
Note Notes: CTV - Controlled Test Vehicle; GTI - Ground Test Integrated; GTD - Ground Test Distributed; GTX - Ground Test Exercise; GDEx - Global Defender Exercise; FTG - Flight Test Ground-Based Interceptor; FTO - Flight Test Operational; FTX - Flight Test Exercise; N/P - NORTHCOM/PACOM		

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Missile Defense Agency										Date: March 2019		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
MD40: Program Wide Support	5.829	3.254	3.623	2.908	-	2.908	3.604	3.053	3.620	3.550	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency PE's 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 BMDS. It Includes Government Civilians and Contract Support Services. This provides integrity and oversight of the BMDS 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. 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; data and unified communications support; supplies and maintenance; materiel and readiness and central property management of equipment; 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 2018	FY 2019	FY 2020
Title: Program Wide Support	3.254	3.623	2.908
Articles:	-	-	-
<p>Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire BMDS. It Includes Government Civilians and Contract Support Services. This provides integrity and oversight of the BMDS 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. 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; data and unified communications support; supplies and maintenance; materiel and readiness and central property management of equipment; 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>			
FY 2019 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Missile Defense Agency		Date: March 2019		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test		Project (Number/Name) MD40 / Program Wide Support
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2018	FY 2019	FY 2020
- SEE ABOVE.				
FY 2020 Plans: - SEE ABOVE.				
FY 2019 to FY 2020 Increase/Decrease Statement: Decrease from FY 2019 to FY 2020 reflects the PWS allocation on a pro-rata basis across multiple Agency PE's each fiscal year based on the total Agency budget, and therefore fluctuates per PE by fiscal year.				
Accomplishments/Planned Programs Subtotals		3.254	3.623	2.908
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				
E. Performance Metrics				
N/A				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Missile Defense Agency												Date: March 2019			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>						Project (Number/Name) MD40 / <i>Program Wide Support</i>			
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Program Wide Support - Agency Operations User Services	Reqn	Various : Multi: AL, CA, CO, VA	0.000	0.870	Aug 2018	1.987	Jun 2019	1.924	Jun 2020	-		1.924	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	Various : MDA Multi: AL, CO, CA	2.798	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (MIPRs)	MIPR	Various : Multi: AL, VA	0.000	0.016	Aug 2018	0.016	Aug 2019	0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, VA	3.031	2.103	Aug 2018	0.661	Jul 2019	0.250	Dec 2019	-		0.250	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support, International, and Materiel and Readiness (MIPRs)	MIPR	Naval Surface Warfare Center : VA, AL	0.000	0.249	Aug 2018	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, VA, Aust, Japan	0.000	0.016	Jun 2018	0.319	Jul 2019	0.044	Jul 2020	-		0.044	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	MIPR	MITRE Corporation : Multi: AL, VA	0.000	0.000		0.640	Aug 2019	0.690	Nov 2019	-		0.690	Continuing	Continuing	Continuing
Subtotal			5.829	3.254		3.623		2.908		-		2.908	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			5.829	3.254		3.623		2.908		-		2.908	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Missile Defense Agency							Date: March 2019			
Appropriation/Budget Activity 0400 / 4			R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>			Project (Number/Name) MD40 / <i>Program Wide Support</i>				
	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract	
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 2020 Missile Defense Agency														Date: March 2019																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Missile Defense Agency			Date: March 2019
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test	Project (Number/Name) MD40 / Program Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2018	4	2024