Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Missile Defense Agency											Date: April 2022	
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0604181C / *Hypersonic Defense*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	582.172	267.589	287.796	225.477	-	225.477	108.540	110.220	287.535	449.590	Continuing	Continuing
MD29: *Hypersonic Defense*	570.084	257.506	279.016	217.617	-	217.617	104.720	106.452	276.734	432.593	Continuing	Continuing
MD40: *Program Wide Support*	12.088	10.083	8.780	7.860	-	7.860	3.820	3.768	10.801	16.997	Continuing	Continuing
Program MDAP/MAIS Code: 362												

Note

Decrease from FY 2022 to FY 2023 reflects a reduction in technology advancements, systems engineering activities and system upgrades to prioritize the development of a regional, hypersonic glide phase defense capability that will integrate with terminal defense systems to provide a layered defensive capability against hypersonic threats.

A. Mission Description and Budget Item Justification

Strategic competitors and regional adversaries are heavily investing in offensive and defensive hypersonic capabilities, and currently have operational hypersonic systems deployed. These are challenging realities of the emerging missile threat environment that U.S. missile defense policy, strategy, and capabilities must address. These competitors continue to expand the capability and capacity of their offensive hypersonic missile inventories for both strategic and regional hypersonic missiles. Rogue nations have also demonstrated hypersonic missiles in recent flight tests.

The regional Hypersonic Defense (HD) Program Element (PE) includes execution of the systems engineering activities, upgrade of existing systems, investment in new technologies, and development of new defensive capabilities for delivery in the 2030s. MDA's Hypersonic Missile Defense (HMD) strategy includes leveraging existing systems, delivering an initial layered defense capability, and increasing defense capabilities in the future. Activities enabling this strategy are the following:
- Integrate existing and new overhead sensors like the Hypersonic and Ballistic Tracking Space Sensor (HBTSS)
- Update existing Ballistic Missile Defense System (BMDS) Overhead Architecture (BOA)
- Modify existing Aegis SPY radar, fire control, and communications, as well as Command & Control, Battle Management, and Communications (C2BMC) for track and warning of hypersonic threats
- Execute systems engineering for HD (architecture analysis, technology prioritization, requirements development, planning, analysis and capability development)
- Develop a regional Glide Phase Intercept (GPI) operational prototype to engage hypersonic threats during the glide phase of flight
- Mature critical technologies and mitigate key technical risks including testing in relevant environments prior to selecting a final concept
- Partner with the Services and other agencies to leverage work on common technologies, test infrastructure, weapon development, testing, and war-gaming
- Partner with Allies where possible
- Demonstrate the regional defensive capability and performance against hypersonic threats through system testing

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Missile Defense Agency	Date: April 2022
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	272.632	247.931	0.000	-	0.000
Current President's Budget	267.589	287.796	225.477	-	225.477
Total Adjustments	-5.043	39.865	225.477	-	225.477
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	39.865			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-5.043	0.000			
• Missile Defeat and Defense Enhancement	0.000	0.000	0.000	-	0.000
• Other Adjustment	0.000	0.000	225.477	-	225.477

Change Summary Explanation

Increase of $ 39.8 million in FY 2022 provides Congressional Plus-up for partnered flight test participation, engineering enablers and disruptive technologies for future architectures.

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency			Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604181C / *Hypersonic Defense*	Project (Number/Name) MD29 / *Hypersonic Defense*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD29: *Hypersonic Defense*	570.084	257.506	279.016	217.617	-	217.617	104.720	106.452	276.734	432.593	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2022 to FY 2023 reflects a reduction in technology advancements, systems engineering activities and system upgrades to prioritize the development of a regional, hypersonic glide phase defense capability that will integrate with terminal defense systems to provide a layered defensive capability against hypersonic threats.

A. Mission Description and Budget Item Justification

Strategic competitors and regional adversaries are heavily investing in hypersonics, both offense and defense, and currently have operational hypersonic systems deployed. These are challenging realities of the emerging missile threat environment that U.S. missile defense policy, strategy, and capabilities must address. These competitors continue to expand the capability and capacity of their offensive hypersonic missile inventories for both strategic and regional hypersonic missiles. Rogue nations have also demonstrated hypersonic missiles in flight tests.

The regional Hypersonic Defense (HD) Program Element (PE) includes executing systems engineering activities, upgrading existing systems, investing in new technologies, and developing new defensive capabilities. MDA's counter hypersonic threats strategy includes leveraging existing systems, delivering an initial layered defense capability, and increasing defense capabilities in the future. Activities enabling this strategy are the following:
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- Demonstrate the regional defensive capability and performance against hypersonic threats through system testing

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
Title: Engineering Enablers	59.841	77.038	46.932
Articles:	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
Description: Provides systems engineering activities required to evolve the Missile Defense System (MDS) to address hypersonic threats, to include architecture analysis, capability roadmap development, and requirements development. Recurring activities include: - Conduct foundational Systems Engineering activities required to develop regional Hypersonic Defense (HD), including concept definition, requirements and interfaces, system design, integration, test planning, and use of digital engineering tools and practices -- Provide key products for development and maintenance of the technical baseline -- Assess current MDS capabilities against hypersonic threats and analyze future HD solutions to counter the evolving threat -- Develop and integrate modeling and simulation tools to validate HD requirements and assess HD performance -- Support HD reviews to coordinate the technical and program baselines to ensure development of a successful capability -- Continue to mature modeling and simulation architecture - Perform engineering analysis, develop requirements, and define interfaces for sensor-to-weapon fire control using C2BMC to lay the path for connectivity, battle management, and sensor tasking to a weapon system such as Aegis Specific and/or unique accomplishments to each FY are as follows: ***FY 2022 Plans:*** - Provide Truth and Threat Modeling to stimulate and enable integrated M&S federations (Ground Test and All-Digital in-line Truth Models and Threat Modeling) - Develop hypersonic threat models and update existing threat models based on real-world data to support analysis - Conduct wind tunnel and aero optics testing - Develop end game guidance and performance M&S anchored in aero and aero optical test data - Conduct mid-term and long-term Hypersonic defense architecture analysis - Perform architecture analysis for hypersonic defense and continue implementation of digital engineering - Conduct lethality analysis for both kinetic and non-kinetic measures against hypersonic threats ***FY 2023 Plans:*** - Perform architecture analysis for regional hypersonic defense and continue implementation of digital engineering - Conduct analysis and testing to reduce risk of key technical enablers for regional hypersonic defense - Reduce technical risk with Federally Funded Research Development Centers, University Affiliated Research Centers, and National Labs to conduct analysis, develop prototypes, and execute testing for both kinetic and non-kinetic defensive measures - Continue development of HD models, to include Core Truth Model updates - Leverage cost share opportunities with offensive hypersonic systems to test engineering payloads in low-cost sounding rocket flight tests			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
- Continue development of hypersonic threat models and update existing threat models based on real-world data to support analysis ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY 2022 to FY 2023 reflects the Congressional add for engineering risk assessment and analysis efforts and the reduction of engineering activities to realign regional Hypersonic Defense resources to support regional GPI development.			
Title: Disruptive Technologies for Future Architecture	64.919	26.565	9.261
Articles:	-	-	-
Description: Provides identification, development of new technology and capabilities needed across the kill chain in support of Hypersonic Missile Defense architecture alternatives, and the ability to address advanced threats through kinetic and non-kinetic capabilities. Specific and/or unique accomplishments to each FY are as follows:			
FY 2022 Plans: - Continue to develop low-cost/light weight Focal Plane Array sensor electronics for increased throughput and cryocoolers in an open architecture applicable to multiple sensor systems - Continue development of advanced technology concepts to counter the evolving threats - Continue to develop propulsion technology to increase maneuverability and energy management for future endo-atmospheric hypersonic interceptor kill vehicles and rocket motors to include testing and demonstrations in relevant environments - Conduct technology risk reduction activities for advanced long term seeker windows, on-demand propulsion, thermal protection system testing and lethality testing of non-kinetic systems			
FY 2023 Plans: - Continue to develop supporting low-cost/light weight Focal Plane Array sensor electronics for increased throughput and cryocoolers in an open architecture applicable to multiple sensor systems - Continue development of advanced technology concepts to counter the evolving threats - Continue to develop propulsion technology to increase maneuverability and energy management for future endo-atmospheric hypersonic interceptor kill vehicles and rocket motors to include testing and demonstrations in relevant environments			
FY 2022 to FY 2023 Increase/Decrease Statement: Decrease from FY 2022 to 2023 reflects the Congressional add for characterization testing of advanced technologies and the reduction of development efforts for hypersonic component technology advancements.			
Title: Leverage and Upgrade Existing Systems	34.379	21.559	12.424
Articles:	-	-	-
Description: Analyze existing systems capability to defend against hypersonic threats and upgrade existing systems to support hypersonic missile defense activities. Specific and/or unique accomplishments to each FY are as follows:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: - Upgrade BOA/C2BMC to support regional Aegis Glide Phase Intercept (GPI) capability - Continue BOA/C2BMC algorithm development and prototyping for advanced threat battle management to support weapon system engagement - Complete AN/TPY-2 test integration and track reporting threats with C2BMC using CX software version 5 (CX5), which will contribute to end-to-end missile defense system performance ***FY 2023 Plans:*** - Continue upgrade for BOA/C2BMC to support regional Aegis GPI capability - Provide BOA algorithm development and prototyping for low latency tracks in support of regional GPI hypersonic defense efforts ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY 2022 to FY 2023 reflects completion of AN/TPY-2 test integration and track reporting threats with C2BMC for end-to-end missile defense system performance.			
Title: Regional Glide Phase Defeat Weapon System	95.358	135.854	149.000
Articles:	-	-	-
Description: This effort develops an operational defensive capability to engage and defeat regional hypersonic threats during the glide phase of flight using the proven Aegis Weapon System. This will provide an additional layer of regional hypersonic defense from an Aegis ship which also augments Sea-Based Terminal capability by extending the battlespace of early terminal. The operational defensive capability includes the development of a regional GPI missile that reduces the operational seam currently used by hypersonic threats to fly between air defense and ballistic missile defense systems. The effort also includes updates to the Aegis Weapon System (AWS) for planning, tracking and conducting launch on remote engagements against hypersonic threats within the MDS as well as conducting studies and advancing hypersonic capability to legacy Aegis Weapon Systems. Specific and/or unique accomplishments to each FY are as follows:			
FY 2022 Plans: Regional GPI Missile - Continue regional GPI design analysis activities and requirements definition - Conduct Technology Readiness Level Assessments of contractor designs - Conduct regional GPI Missile System Requirement Reviews (SRR) for multiple vendor designs which ensures the system under review can proceed into initial systems development - Initiate preparations for multiple regional GPI missile Preliminary Design Reviews (PDR) which establishes the allocated baseline for the regional GPI capability to include Mk 41 Vertical Launch System integration and Aegis Launch on Remote engagement capability - Conduct studies to explore and advance concepts in missile technology			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
- Design and procure material for Software Evaluation Station (SWES), Computer In The Loop (CIL) and Hardware In The Loop (HIL) Aegis Weapon System - Conduct Aegis Weapon System trade studies and concepts supporting Level A-Specification development - Continue modeling changes needed to incorporate Aegis Weapon System upgrades and Interceptor development - Initiate preparations for Aegis Weapon System (AWS) development Preliminary Design Reviews (PDR) which establishes the allocated baseline work associated with the regional GPI Interceptor to include Mission Planning capabilities -- Launch On Remote Engagement Capability -- C2 logic required for hypersonic vehicle glide phase engagements -- C2BMC algorithm development and prototyping for advanced threat battle management to support weapon system engagement -- Hypersonic glide phase engagement sequences -- Integration of AWS with new regional Hypersonic Glide Phase Interceptor -- Interoperability of AWS Regional Glide Phase capability with the MDS - Conduct reviews and activities for improving defense against hypersonic threats with the Aegis platform - Conduct studies to explore and advance concepts in weapon system technology			
FY 2023 Plans: Regional GPI Missile - Continue Technology Readiness Level Assessments of contractor designs - Purchase materials for the technology level maturation testing of critical technologies - Initiate preparations for GPI missile Preliminary Design Reviews (PDR) for multiple vendor designs to establish the baseline for the regional GPI capability to include Mk 41 Vertical Launch System integration and Aegis Engage on Remote engagement capability - Conduct studies to explore and advance concepts in missile technology Aegis Weapon System - Continue AWS trade studies and concepts supporting Aegis BMD Element Specification development - Continue modeling changes needed to incorporate AWS upgrades and Interceptor development - Continue Systems Engineering preparations for AWS SRR which establishes the Aegis BMD element specification requirements for a regional GPI capability and the integration of the regional GPI layered defense (regional GPI plus regional GPI with Sea Base Terminal (SBT) Increment 3) - Perform interoperability planning of AWS Regional Glide Phase capability with the MDS - Continue reviews and activities for improving defense against hypersonic threats with the Aegis platform - Continue studies to explore and advance concepts in weapon system technology			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
- Develop Prototype Code for observation purposes during FTX-40 and FTM-43 to support GPI development ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase from FY 2022 to FY 2023 provides continued delivery of initial regional hypersonic glide phase defense capability.			
Title: Partnered Flight Test Participation	3.009	18.000	0.000
Articles:	-	-	-
Description: MDA's participation in Partner Flight Test events is critical for data collection across a diverse hypersonic threat set from multiple types of launch platforms. Participation in these test events supports the development and fielding of MDA's regional Hypersonic Defense capabilities to protect the United States, its allies, and deployed forces in all phases of flight. ***FY 2022 Plans:*** Participate and collect data in flight test events to support development and fielding of Hypersonic Defense capabilities. ***FY 2023 Plans:*** N/A. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY 2022 to FY 2023 reflects the FY 2022 Congressional add to support partnered flight test events.			
Accomplishments/Planned Programs Subtotals	257.506	279.016	217.617

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0603176C: *Advanced Concepts and Performance Assessment*	49.069	40.000	16.737	-	16.737	17.265	17.693	18.109	18.477	Continuing	Continuing
• 0603180C: *Advanced Research*	29.621	47.966	22.023	-	22.023	22.758	23.296	23.851	24.335	Continuing	Continuing
• 0603884C: *Ballistic Missile Defense Sensors*	259.605	254.962	231.134	-	231.134	250.028	274.705	276.254	257.575	Continuing	Continuing
• 0603890C: *BMD Enabling Programs*	607.167	623.644	591.847	-	591.847	613.589	625.761	635.633	640.374	Continuing	Continuing
• 0603892C: *AEGIS BMD*	861.809	639.549	600.072	-	600.072	658.798	574.014	570.018	580.496	Continuing	Continuing
• 0603896C: *Ballistic Missile Defense Command and Control, Battle Management & Communication*	639.027	564.946	589.374	-	589.374	575.883	588.824	612.853	605.801	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0603915C: *Ballistic Missile Defense Targets*	534.348	560.478	559.513	-	559.513	555.341	623.995	628.146	632.072	Continuing	Continuing
• 1206895C: *Ballistic Missile Defense System Space Programs*	161.267	292.811	129.957	-	129.957	120.392	124.652	48.055	49.029	Continuing	Continuing

Remarks

D. Acquisition Strategy

To optimize Missile Defense System performance, MDA leverages the nation's engineering centers of excellence at government agencies, Military Services, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and industry. The executing agents use varying contracting strategies in a flexible manner to maximize their contribution to the Missile Defense System. MDA acquires products and services by competitive means to the extent that is possible, practical and uses the Advanced Technology Broad Area Announcement process to award concept definition contracts.

For the regional Glide Phase Interceptor (GPI), MDA developed the acquisition strategy to utilize a Broad Agency Announcement (BAA) for the competitive selection and award of Other Transaction Authority (OTA) agreements. This strategy plans to award to one or more contractors through SRR to drive innovation in missile system modification. OTA Agreement awarded in November 2021.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - Hypersonic Architectures Modeling, Requirements and Simulations (HAMRS)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	0.000	0.000		0.000		6.113	Dec 2022	-		6.113	Continuing	Continuing	Continuing
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - MITRE	MIPR	THE MITRE CORPORATION : Various	0.000	0.000		0.000		1.658	Dec 2022	-		1.658	Continuing	Continuing	Continuing
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - Engineering Architecture Analysis Support	MIPR	MASSACHUSETTS INSTITUTE OF TECHNOLOGY : MA	0.000	0.000		0.000		4.667	Dec 2022	-		4.667	Continuing	Continuing	Continuing
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - Aerospace	MIPR	THE AEROSPACE CORPORATION : CA	0.000	0.000		0.000		2.111	Dec 2022	-		2.111	Continuing	Continuing	Continuing
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - SNL	IA	Department of Energy (DOE)/National Nuclear Security Administration/ Sandia Field Office (NNSA SFO) : NM	0.000	0.000		0.000		4.066	Dec 2022	-		4.066	Continuing	Continuing	Continuing
Hypersonic Defense - Component Technology for Sensors and Weapons	MIPR	Various : AL	20.500	0.000		0.000		0.000		-		0.000	0.000	20.500	0.000
Engineering Enablers - Engineering Enablers - Regional Hypersonic Defense - Systems Engineering	Various	Various : Various	0.000	0.000		0.000		1.681	Dec 2022	-		1.681	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency			Date: April 2022
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
– Requirements Development															
Hypersonic Defense - MDS C2BMC Upgrades	C/Various	Various : AL	33.645	0.000		0.000		0.000		-		0.000	0.000	33.645	0.000
Hypersonic Defense - MDS Sensor Upgrades - AN/TPY-2	SS/CPFF	Raytheon : MA	16.474	0.000		0.000		0.000		-		0.000	0.000	16.474	0.000
Hypersonic Defense - MDS Sensor Upgrades - LRDR	C/FFP	Lockheed Martin : NJ	12.007	0.000		0.000		0.000		-		0.000	0.000	12.007	0.000
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering	Various	MDA : AL, VA	12.620	8.342	Nov 2020	33.020	Nov 2021	1.000	Dec 2022	-		1.000	Continuing	Continuing	Continuing
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - JHU/APL	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	0.000		0.000		10.578	Dec 2022	-		10.578	Continuing	Continuing	Continuing
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - Lethality and Analysis	IA	DOE - DEPARTMENT OF ENERGY (DOE) : Various	8.325	8.407	Nov 2020	8.575	Nov 2021	4.441	Nov 2022	-		4.441	Continuing	Continuing	Continuing
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - M&S	C/CPAF	Northrop Grumman : AL	6.680	6.815	Jan 2021	9.153	Dec 2021	4.559	Dec 2022	-		4.559	Continuing	Continuing	Continuing
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - Threat Engineering	Various	Various : AL	12.834	4.053	Feb 2021	2.050	Dec 2021	2.000	Dec 2022	-		2.000	Continuing	Continuing	Continuing
Engineering Enablers - Regional Hypersonic	C/CPFF	PARSONS GOVERNMENT	7.473	3.533	Nov 2020	3.531	Nov 2021	2.758	Nov 2022	-		2.758	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Defense - Systems Engineering -- CSS		SERVICES INC. : AL, VA													
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering -- FFRDC/ UARC	MIPR	Various : AL, VA	28.502	28.691	Oct 2020	20.709	Dec 2021	0.000		-		0.000	0.000	77.902	0.000
Hypersonic Defense - Sensor Technology - Advanced Threat Tracking and Analysis / Low Latency Processing	MIPR	Various : AL, CA	13.016	0.000		0.000		0.000		-		0.000	0.000	13.016	0.000
Hypersonic Defense - Sensor Technology - Sensor Concept and Development	MIPR	Various : AL	21.522	0.000		0.000		0.000		-		0.000	0.000	21.522	0.000
Hypersonic Defense - Systems Engineering	Allot	MDA : AL, VA	5.444	0.000		0.000		0.000		-		0.000	0.000	5.444	0.000
Engineering Enablers - Systems Engineering - CS Specialized	C/CPFF	TBD : Various	0.000	0.000		0.000		1.300	Nov 2022	-		1.300	Continuing	Continuing	Continuing
Hypersonic Defense - Systems Engineering -- CSS	C/CPFF	TEAMS : AL, VA	6.688	0.000		0.000		0.000		-		0.000	0.000	6.688	0.000
Hypersonic Defense - Systems Engineering -- FFRDC/UARC	MIPR	Various : VA, AL	7.257	0.000		0.000		0.000		-		0.000	0.000	7.257	0.000
Hypersonic Defense - Systems Engineering -- Industry	C/CPAF	Boeing : AL	3.539	0.000		0.000		0.000		-		0.000	0.000	3.539	0.000
Hypersonic Defense - Technology Development Program Operations	Allot	MDA : AL, VA	11.861	0.000		0.000		0.000		-		0.000	0.000	11.861	0.000
Hypersonic Defense - Weapon Concept	C/Various	Various : AL	38.301	0.000		0.000		0.000		-		0.000	0.000	38.301	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Definition & Risk Reduction															
Disruptive Technologies for Future Architecture - Component Technology for Sensors and Weapons - High Temperature Materials	C/CPFF	Various : Various	0.000	0.000		0.000		0.500	Dec 2022	-		0.500	Continuing	Continuing	Continuing
Disruptive Technologies for Future Architecture - Component Technology for Sensors and Weapons - Propulsion and Aero-Controls	C/CPFF	NORTHROP GRUMMAN : Various	0.000	0.000		4.000	Jul 2022	0.917	Dec 2022	-		0.917	Continuing	Continuing	Continuing
Disruptive Technologies for Future Architecture - Component Technology for Sensors and Weapons - Seeker and Aero-Optics - Boeing	C/CPFF	BOEING : AL	0.000	0.000		0.500	Jul 2022	1.980	Dec 2022	-		1.980	Continuing	Continuing	Continuing
Disruptive Technologies for Future Architecture - Component Technology for Sensors and Weapons - Seeker and Aero-Optics - SDL	C/CPFF	SPACE DYNAMICS LABORATORY : Various	0.000	0.000		3.200	Apr 2022	0.938	Dec 2022	-		0.938	Continuing	Continuing	Continuing
Disruptive Technologies for Future Architecture - Regional Hypersonic Defense - Component Technology for Sensors and Weapons	MIPR	Various : AL	16.104	37.678	Nov 2020	11.794	Dec 2021	0.000		-		0.000	0.000	65.576	0.000
Disruptive Technologies for Future Architecture - Regional Hypersonic Defense - Sensor Technology - Advanced	MIPR	Various : AL, CA	7.351	14.375	May 2021	2.300	May 2022	0.000		-		0.000	0.000	24.026	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency			Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604181C / *Hypersonic Defense*	Project (Number/Name) MD29 / *Hypersonic Defense*	

Product Development ($ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Threat Tracking and Analysis / Low Latency Processing															
Disruptive Technologies for Future Architecture - Regional Hypersonic Defense - Sensor Technology / Sensor Concept and Development	MIPR	DOD - USAF - SECRETARY OF THE AIR FORCE, FINANCIAL MANAGEMENT (SAF/FM) : Various	15.068	12.866	Jun 2021	4.771	Dec 2021	4.926	Dec 2022	-		4.926	Continuing	Continuing	Continuing
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - C2BMC Regional GPI	C/CPAF	SciTec : Newark, NJ	0.000	0.000		4.181	Nov 2021	0.000		-		0.000	0.000	4.181	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - C2BMC Regional GPI (PRIME)	C/CPIF	Lockheed Martin : AL	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - C2BMC Regional GPI Prototype/ Development	C/CPAF	Northrop Grumman : CO	0.000	0.000		12.600	Mar 2022	0.000		-		0.000	0.000	12.600	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - MDS C2BMC	Various	Various : Various	28.092	7.378	Jun 2021	0.000		0.000		-		0.000	0.000	35.470	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - MDS C2BMC Upgrades (Prime)	C/CPIF	Lockheed Martin : AL	8.398	10.207	Apr 2021	0.048	Nov 2021	0.000		-		0.000	0.000	18.653	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic	C/CPAF	Northrop Grumman : CO	23.181	7.417	Mar 2021	3.740	Nov 2021	0.000		-		0.000	0.000	34.338	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency		Date: April 2022
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Defense - MDS C2BMC Upgrades for HD															
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - MDS Sensor Upgrades	C/FFP	Lockheed Martin : NJ	4.189	0.000		0.000		0.000		-		0.000	0.000	4.189	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - MDS Sensor Upgrades - AN/TPY-2	SS/CPFF	Raytheon : MA	30.793	0.000		0.990	Nov 2021	0.000		-		0.000	0.000	31.783	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense-C2BMC Regional GPI Upgrades	C/CPFF	NORTHROP GRUMMAN : CO	0.000	0.000		0.000		12.424	Dec 2022	-		12.424	Continuing	Continuing	Continuing
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense-MDS C2BMC Upgrades BAA	C/CPFF	LOCKHEED MARTIN CORPORATION : TX	0.000	9.377	Mar 2021	0.000		0.000		-		0.000	0.000	9.377	0.000
Regional Glide Phase Defeat Weapon System - Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Missile System	C/Various	Various : Various	0.000	15.700	Nov 2021	0.000		115.092	Nov 2022	-		115.092	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Engineering Support	MIPR	NSWCD : VA	0.000	9.259	Nov 2020	13.525	Nov 2021	8.000	Nov 2022	-		8.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic	MIPR	NIWC PAC : CA	0.000	2.091	Nov 2020	3.560	Nov 2021	0.000		-		0.000	0.000	5.651	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Defense - Interface Change Proposals															
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Special Studies	C/CPAF	APL : MD	0.000	9.314	Nov 2020	4.271	Nov 2021	6.450	Nov 2022	-		6.450	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Systems Engineering	MIPR	MIT/LL : MA	0.000	4.300	Nov 2020	14.237	Nov 2021	3.000	Nov 2022	-		3.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Systems Engineering Support	MIPR	MITRE : VA	0.000	0.443	Nov 2020	1.424	Nov 2021	0.458	Nov 2022	-		0.458	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Weapon Concept Definition and Risk Reduction	C/Various	Various : VA	62.275	0.000		0.000		0.000		-		0.000	0.000	62.275	0.000
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Weapon System Modification	C/CPIF	Lockheed Martin : NJ	0.000	44.165	Sep 2021	98.837	Nov 2021	16.000	Nov 2022	-		16.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense -MDA	Allot	MDA : AL, VA	3.866	7.086	Oct 2020	0.000		0.000		-		0.000	0.000	10.952	0.000
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense- Weapon System Special Studies	Various	Various : TBD	0.000	3.000	Aug 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency			Date: April 2022
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			466.005	254.497		261.016		217.617		-		217.617	Continuing	Continuing	N/A

Remarks

N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Partnered Flight Test Participation - Partner Flight Test Participation	MIPR	Space and Missile Defense Command/ US Maritime Administration/ Pacific Missile Range Facility/ Ronald Reagan Test Site/ L3/JHU/APL/ MDIOC/ Lockheed Martin/AMRDEC/ NSWC/NAWC : AL/ CA/CO/DC/HI/TN/TX	104.079	3.009	Aug 2021	18.000	Jul 2022	0.000		-		0.000	0.000	125.088	0.000
Subtotal			104.079	3.009		18.000		0.000		-		0.000	0.000	125.088	N/A

Remarks

N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	570.084	257.506		279.016		217.617		-		217.617	Continuing	Continuing	N/A

Remarks

Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

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 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
Regional Hypersonic Defense Sensor and Weapons Component Technology Performance Testing	✦	✦	✦	✦																								
C2BMC Capability Development	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧														
Hypersonic Threat Sensor Technology Development	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Weapons Technology Risk Reduction Contract(s) Award	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Regional Hypersonic Defense Sensor & Weapons Component Technology Capability Development	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Missile System Requirement Review								✧																				
Weapon System Preliminary System Review								✧																				
Weapons System Requirement Review															✧													
Weapon System Development Preliminary Design Review																												✧
Missile System Preliminary Design Review																												✧

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD29 / *Hypersonic Defense*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Regional Hypersonic Defense Sensor and Weapons Component Technology Performance Testing	1	2021	4	2021
C2BMC Capability Development	1	2021	2	2024
Hypersonic Threat Sensor Technology Development	1	2021	4	2027
Weapons Technology Risk Reduction Contract(s) Award	1	2021	4	2027
Regional Hypersonic Defense Sensor & Weapons Component Technology Capability Development	1	2021	4	2027
Missile System Requirement Review	4	2022	4	2022
Weapon System Preliminary System Review	4	2022	4	2022
Weapons System Requirement Review	4	2024	4	2024
Weapon System Development Preliminary Design Review	4	2027	4	2027
Missile System Preliminary Design Review	4	2027	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency			Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604181C / *Hypersonic Defense*	Project (Number/Name) MD40 / *Program Wide Support*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD40: *Program Wide Support*	12.088	10.083	8.780	7.860	-	7.860	3.820	3.768	10.801	16.997	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 2021	FY 2022	FY 2023
Title: Program Wide Support	10.083	8.780	7.860
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, Restoration and Modernization (FSRM) program, (formerly Real Property Maintenance) to keep the Department's inventory of			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD40 / *Program Wide Support*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
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. ***FY 2022 Plans:*** - SEE ABOVE. ***FY 2023 Plans:*** - SEE ABOVE. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY 2022 to FY 2023 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.			
Accomplishments/Planned Programs Subtotals	10.083	8.780	7.860

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD40 / *Program Wide Support*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance	MIPR	Various : AL, CO, CA, VA	0.000	0.000		6.485	Nov 2021	0.015	Nov 2022	-		0.015	Continuing	Continuing	Continuing
Program Wide Support - Agency Facilities and Maintenance SRM	MIPR	Various : Multi: AK, AL, CA, CO, HI, VA	0.000	4.370	Dec 2020	1.084	Dec 2021	1.472	Nov 2022	-		1.472	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Various	Various : Multi, AL, CA, CO, VA	0.182	1.979	Nov 2020	0.000		0.000		-		0.000	0.000	2.161	0.000
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various : Multi: AK/ AL/CA/CO/HI/MD/ VA/NJ/NY/OCONUS	0.000	0.265	Nov 2020	0.000		0.000		-		0.000	0.000	0.265	0.000
Program Wide Support - Agency Operations and Support Services	C/Various	PARSONS GOVERNMENT SERVICES INC. : Multi: AK, AL, CA, CO, HI, VA	5.308	0.000		1.211	Nov 2021	6.373	Nov 2022	-		6.373	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations, Sustainment and GPC	C/FFP	Various : Multi: AK, AL, CA, HI, NY, NM, VA	0.000	3.469	Nov 2020	0.000		0.000		-		0.000	0.000	3.469	0.000
Program Wide Support - Facilities Maintenance	MIPR	Various : Multi: AK, AL, CA, CO, HI, VA	6.598	0.000		0.000		0.000		-		0.000	0.000	6.598	0.000
		Subtotal	12.088	10.083		8.780		7.860		-		7.860	Continuing	Continuing	N/A

Remarks

N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.088	10.083		8.780		7.860		-		7.860	Continuing	Continuing	N/A

Remarks

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

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD40 / *Program Wide Support*

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 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
MD40 Program-Wide Support	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604181C / *Hypersonic Defense*	**Project (Number/Name)** MD40 / *Program Wide Support*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MD40 Program-Wide Support	1	2021	4	2027