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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Missile Defense Agency **Date:** April 2022

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 0604672C / <i>Homeland Defense Radar-Hawaii</i>
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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	245.491	133.000	75.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	453.491
MD41: <i>Homeland Defense Radar-Hawaii (HDR-H)</i>	245.491	133.000	75.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	453.491

Program MDAP/MAIS Code: 362

Note

Decrease from FY 2022 to FY 2023 reflects completion of the \$75.0 million Congressional Plus Up (CPU) to continue development of the Homeland Defense Radar-Hawaii. No funding is requested in FY 2023 for this program.

A. Mission Description and Budget Item Justification

The Homeland Defense Radar - Hawaii (HDR-H) was envisioned as a persistent tracking and discrimination radar that could provide added capability to the Ballistic Missile System (BMDS) to support defense of Hawaii. The defense of Hawaii remains a high priority mission for the Department of Defense. The Department has recently initiated a broader study on the defense of Hawaii. This study will characterize the broader air and missile evolved threat to Hawaii and identify the most effective means of mitigating this risk, considering domain awareness capabilities, passive resilience measures, and active defense. The results of this study are intended to inform potential investment options for President's Budget (PB) 2024. Pending the outcome of the study, MDA will explore alternate options for potential uses of already produced components and technology. Subsequently, the Department, pending congressional approval, will determine the best option to utilize these components and technology, which may include potential placement of sensors in other locations.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	133.000	0.000	0.000	-	0.000
Current President's Budget	133.000	75.000	0.000	-	0.000
Total Adjustments	0.000	75.000	0.000	-	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	75.000			
• 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	0.000	0.000	0.000	-	0.000

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Change Summary Explanation

Increase of \$75 million in FY 2022 provides Congressional Plus-up for the continued development of the Homeland Defense Radar-Hawaii.

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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 0604672C / <i>Homeland Defense Radar-Hawaii</i>	Project (Number/Name) MD41 / <i>Homeland Defense Radar-Hawaii (HDR-H)</i>
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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
MD41: <i>Homeland Defense Radar-Hawaii (HDR-H)</i>	245.491	133.000	75.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	453.491
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Note

The FY 2022 Defense Appropriation included a \$75 million Congressional Plus Up (CPU) for the continued development of the Homeland Defense Radar-Hawaii.

A. Mission Description and Budget Item Justification

The Homeland Defense Radar - Hawaii (HDR-H) was envisioned as a persistent tracking and discrimination radar that could provide added capability to the Ballistic Missile System (BMDS) to support defense of Hawaii. The defense of Hawaii remains a high priority mission for the Department of Defense. The Department has recently initiated a broader study on the defense of Hawaii. This study will characterize the broader air and missile evolved threat to Hawaii and identify the most effective means of mitigating this risk, considering domain awareness capabilities, passive resilience measures, and active defense. The results of this study are intended to inform potential investment options for President's Budget (PB) 2024. Pending the outcome of the study, MDA will explore alternate options for potential uses of already produced components and technology. Subsequently, the Department, pending congressional approval, will determine the best option to utilize these components and technology, which may include potential placement of sensors in other locations.

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

	FY 2021	FY 2022	FY 2023
Title: Homeland Defense Radar - Hawaii (HDR-H)	133.000	75.000	0.000
Articles:	-	-	-
<p>Description: The HDR-H program includes requirements development activities associated with systems engineering, hardware and software development, discrimination improvements, design reviews, testing, and Modeling and Simulation (M&S) efforts for radar development. Efforts include site activation and preparation of site infrastructure for construction activities. The program will develop and integrate C2BMC systems for HDR-H functionality. The program will develop and deliver radar software releases and will conduct Independent Verification and Validation (IV&V) testing of tactical software. The program includes procurement of radar long lead materials, initiation of production for radar components and sub-assemblies, and test of long lead components.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> -Continue production of HDR-H hardware including: sub-array suites (SAS), antenna panels, and tactical on-array hardware -Continue Electromagnetic environment analysis at Pacific Missile Range Facility (PMRF) -Continue Environmental Impact Statement (EIS) effort, site selection, and radar site planning -Continue technical studies and analyses to support facility design 			

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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 0604672C / Homeland Defense Radar-Hawaii	Project (Number/Name) MD41 / Homeland Defense Radar-Hawaii (HDR-H)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
-Continue HDR-H software development			
FY 2023 Plans: -No funding requested for this effort in FY 2023			
FY 2022 to FY 2023 Increase/Decrease Statement: No funding is requested in FY 2023 for HDR-H			
Accomplishments/Planned Programs Subtotals	133.000	75.000	0.000

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	1,195.853	724.028	667.524	-	667.524	870.817	802.617	781.973	765.733	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
• 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
• 0604873C: Long Range Discrimination Radar (LRDR)	135.088	133.335	75.120	-	75.120	103.451	95.712	71.715	76.316	Continuing	Continuing
• 0604879C: Ballistic Missile Defense Sensor Test	64.245	77.428	88.326	-	88.326	91.495	98.146	103.010	145.810	Continuing	Continuing
• 32199903: MILCON PLANNING and DESIGN	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Remarks

D. Acquisition Strategy

An acquisition strategy was approved in December 2017 for the procurement of a single Homeland Defense Radar (HDR) for Hawaii. In May of 2018, this acquisition strategy was updated to include the procurement of up to three Homeland Defense Radars. A competitively awarded multiple-award indefinite delivery, indefinite quantity (IDIQ) contract was awarded in July 2018 to three contractors. The first IDIQ delivery order was competitively awarded on December 18, 2018 for the development, construction, integration and testing, and delivery of one HDR to be sited in Hawaii. The HDR-H delivery order contract includes fixed price and cost-

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Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
0400 / 4	PE 0604672C / <i>Homeland Defense Radar-Hawaii</i>	MD41 / <i>Homeland Defense Radar-Hawaii (HDR-H)</i>

reimbursable line items that properly balance acquisition costs and risks. Performance and cost incentives were included to motivate contractor performance. The HDR-H delivery order contract includes the requirement for the radar prime to deliver a full technical data package (TDP) that will enable the Government to effectively and affordably sustain the system. As a result of delays in site selection, MDA issued a Partial Stop-Work Order on January 30, 2020 in accordance with Federal Acquisition Regulations (FAR) Clause 52.242-15, Stop-Work Order, and directed Lockheed Martin to stop work against the HDR-H Radar Prime contract except for efforts associated with the manufacturing of sub-array suites (SAS), antenna panels, and two processing cabinets.

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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 0604672C / Homeland Defense Radar-Hawaii	Project (Number/Name) MD41 / Homeland Defense Radar-Hawaii (HDR-H)
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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Homeland Defense Radar - Hawaii (HDR-H) - Civilians/Travel	Allot	MDA : Various	3.509	4.480	Oct 2020	0.865	May 2022	0.000		-		0.000	0.000	8.854	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Communications Integration	SS/CPIF	Lockheed Martin : AL	2.978	6.044	Apr 2021	0.000		0.000		-		0.000	0.000	9.022	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Contractor Support Services	C/CPFF	MDA Various : AL	10.109	3.503	Nov 2020	2.536	Jul 2022	0.000		-		0.000	0.000	16.148	0.000
Homeland Defense Radar - Hawaii (HDR-H) - FFRDC/UARC	MIPR	GTRI, JHU/APL, MITRE : GA, VA, AL	5.075	1.968	Jul 2021	0.195	Jul 2022	0.000		-		0.000	0.000	7.238	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Lead Service Cell	C/CPFF	MDA Various : AL, CO	0.308	0.000		0.000		0.000		-		0.000	0.000	0.308	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Prime Contractor	C/FPIF	Lockheed Martin : NJ	209.410	117.005	Apr 2021	70.404	Apr 2022	0.000		-		0.000	0.000	396.819	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Radar Material	MIPR	Air Force : GA	0.175	0.000		0.000		0.000		-		0.000	0.000	0.175	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Site Activation & Studies	MIPR	Various : AL, HI	13.927	0.000		1.000	Aug 2022	0.000		-		0.000	0.000	14.927	0.000
Subtotal			245.491	133.000		75.000		0.000		-		0.000	0.000	453.491	N/A

Remarks
N/A

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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 0604672C / Homeland Defense Radar-Hawaii	Project (Number/Name) MD41 / Homeland Defense Radar-Hawaii (HDR-H)
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Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	245.491	133.000	75.000	0.000	-	0.000	0.000	453.491	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 2023 Missile Defense Agency						Date: April 2022														
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604672C / <i>Homeland Defense Radar-Hawaii</i>				Project (Number/Name) MD41 / <i>Homeland Defense Radar-Hawaii (HDR-H)</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 2021		FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027			
Homeland Defense Radar - Hawaii (HDR-H)					◇	◇	◇	◇	◇	◇	◇	◇								

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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 0604672C / <i>Homeland Defense Radar-Hawaii</i>	Project (Number/Name) MD41 / <i>Homeland Defense Radar-Hawaii (HDR-H)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Homeland Defense Radar - Hawaii (HDR-H)	1	2021	4	2022