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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Missile Defense Agency **Date:** May 2021

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 0603913C / <i>Israeli Cooperative Programs</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	1,858.391	300.000	300.000	300.000	-	300.000	-	-	-	-	-	-
MD26: <i>Arrow Weapon System</i>	674.645	159.000	173.000	173.000	-	173.000	-	-	-	-	-	-
MD34: <i>Short Range Ballistic Missile Defense (SRBMD) (David's Sling Weapon System (DSWS))</i>	1,183.746	141.000	127.000	127.000	-	127.000	-	-	-	-	-	-

Program MDAP/MAIS Code: 362

Note

Content supports expected contributions from Israel per international agreements.

A. Mission Description and Budget Item Justification

Since 1986, the United States (U.S.) and the State of Israel have cooperated on missile defense. Currently, the Missile Defense Agency (MDA) has two major projects with Israel to develop and improve their indigenous capability to defend against short and medium range ballistic missiles. These include the Arrow Weapon System (AWS) (MD26) and the Short Range Ballistic Missile Defense (SRBMD) David's Sling Weapon System (DSWS)(MD34). Within these projects MDA along with Israeli Missile Defense Organization (IMDO) develops and produces weapon systems, conducts tests, and exercises interoperability between U.S. Ballistic Missile Defense System (BMDS) and the Israeli Missile Defense Architecture.

The U.S. and State of Israel entered into a Memorandum of Understanding (MOU) on September 2016, in which "Such funding, should over a ten year period beginning in FY 2019 and ending in FY 2028, be provided at a level of \$500 million per year." (U.S. contributions only). These funds will be distributed between the Israeli Programs in Research Development Test & Evaluation (RDT&E) and Procurement Funds.

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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>
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B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	300.000	300.000	300.000	-	300.000
Current President's Budget	300.000	300.000	300.000	-	300.000
Total Adjustments	0.000	0.000	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	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Missile Defeat and Defense Enhancement	0.000	0.000	0.000	-	0.000
• Other Adjustment	0.000	0.000	0.000	-	0.000

Change Summary Explanation

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency **Date:** May 2021

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Arrow Weapon System</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
MD26: <i>Arrow Weapon System</i>	674.645	159.000	173.000	173.000	-	173.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Note

This project encompasses the Missile Defense Agency's (MDA) U.S.-Israeli cooperative program for the Israeli AWS Program.

A. Mission Description and Budget Item Justification

Israeli AWS: This system includes block upgrades to the AWS components which enhances capabilities against evolving medium range threats by increasing the total defended area. AWS elements include the Arrow-2 and Arrow-3 missiles and launchers, Citron Tree Battle Management Center (BMC), Green Pine (GP) and Super Green Pine (SGP) Radars, and the Hazelnut Tree Launcher Control Center (LCC).

Arrow Block 5 development incorporates a Long Range Detection Suite (LRDS) that consists of an Unmanned Aerial Vehicle (UAV), Airborne Early Warning System (ABEWS) and Sharp Eye Radar for increased sensor range, early detection and enhanced raid size capacity. In addition, an Arrow-4 interceptor will be developed. The program also includes the continued development of Arrow's interoperability with U.S. BMDS.

The U.S. and State of Israel entered into a Memorandum of Understanding (MOU) on September 2016, in which "Such funding, should over a ten year period beginning in FY 2019 and ending in FY 2028, be provided at a level of \$500 million per year." (U.S. contributions only). These funds will be distributed between the Israeli Programs in Research Development Test & Evaluation (RDT&E) and Procurement Funds.

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

	FY 2020	FY 2021	FY 2022
Title: Arrow Weapon System	153.940	167.940	167.940
Articles:	-	-	-
Description: The AWS continues Block 5 spiral development and target development. Included is the integration of Block 5 assets, which consists of the Arrow-3 missile, launcher, LRDS and Arrow-4 interceptor. Continue proven Interoperability with U.S. Assets and enhancements to existing AWS System Components. Specific and/or unique planned accomplishments to each FY are as follows:			
FY 2021 Plans:			
-Conduct Block 5.0 Flight Test proving improved system performance			
-Ground Test Integrated Israel- GTI-ISR 21			
FY 2022 Plans:			
-Continue Block 5.0 and Initiate Block 5.1 Development			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency		Date: May 2021		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Arrow Weapon System</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2020	FY 2021	FY 2022
<p>-Conduct Arrow-4 Critical Design Review (CDR) and Launcher Development -Conduct Block 5.0 Flight Test proving improved system performance -Begin System Integration of Sharp Eye Sensors</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: N/A</p>				
<p>Title: Israeli Test Bed (ITB)</p> <p align="right">Articles:</p> <p>Description: The Israeli Test Bed (ITB) provides experiments to evaluate Human Machine Interface (HMI) battle management and integration of Block 5 AWS Techniques Tactics and Procedures (TTPs) and CONOPS. Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2021 Plans: -SEE ABOVE.</p> <p>FY 2022 Plans: -SEE ABOVE.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: N/A</p>		3.535	3.535	3.535
		-	-	-
<p>Title: Israeli Systems Architecture and Integration (ISA&I)</p> <p align="right">Articles:</p> <p>Description: The Israeli Systems Architecture and Integration (ISA&I) conducts studies to assess Israel's future 2031 Missile Defense Architecture. This identifies the preferred missile defense architecture and reference threat for 10-15 year future epoch and interoperability special studies on regional threats and growth path options. Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2021 Plans: -SEE ABOVE.</p> <p>FY 2022 Plans: -SEE ABOVE.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement:</p>		1.525	1.525	1.525
		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency	Date: May 2021
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Arrow Weapon System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022
N/A			
Accomplishments/Planned Programs Subtotals	159.000	173.000	173.000

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

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• 0208866C: MD26: <i>Arrow 3</i> <i>Upper Tier System Procurement</i>	55.000	77.000	62.000	-	62.000	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

The MDA - U.S. Israeli Cooperative Program Office jointly manages the Arrow Program with IMDO to ensure that all systems are delivered with quality, on time, on budget, and meet the needs of the warfighter. The program funding is equitably funded between the U.S. and Israel with Israel providing matching contributions. However, a portion of the Israeli cost share comes from non-financial contributions such as previously completed work prior to joint program initiation. Contracts are awarded by IMDO or MDA, dependent on what is most advantageous to the Joint Governments. In regard to AWS, IMDO contracts on behalf of U.S. government with Israel Aerospace Industries (IAI). IAI subcontracts with Israeli and U.S. companies. For the ITB, the MDA contracts directly with Elbit Systems, Ltd. while IMDO provides an equitable share of the funding to the U.S. Finally, MDA provides funding and contracts directly with WALES, Ltd. for the ISA&I program.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Missile Defense Agency **Date:** May 2021

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Arrow Weapon System</i>
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Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Arrow Weapon System - AWS	C/CPFF	Israel Aerospace Industries (IAI) : Israel	607.393	153.940	Dec 2019	167.940	Dec 2020	167.940	Dec 2021	-		167.940	Continuing	Continuing	Continuing
Israeli Test Bed (ITB) - ITB	C/FFP	Elbit Systems : Israel	38.885	3.535	Dec 2019	3.535	Nov 2020	3.535	Nov 2021	-		3.535	Continuing	Continuing	Continuing
Israeli Systems Architecture and Integration (ISA&I) - ISA&I	C/FFP	Wales LTD : Israel	28.367	1.525	Dec 2019	1.525	Dec 2020	1.525	Dec 2021	-		1.525	Continuing	Continuing	Continuing
Subtotal			674.645	159.000		173.000		173.000		-		173.000	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	674.645	159.000	173.000	173.000	-	173.000	Continuing	Continuing	N/A

Remarks
Contract cost reflect U.S. contribution only.
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 2022 Missile Defense Agency **Date:** May 2021

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Arrow Weapon System</i>
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	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Israeli Test Bed Experiments FY 2020	◆	◆	◆	◆																								
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2020	◆	◆	◆	◆																								
Arrow Weapon System Flight Test FY 2020	◆	◆	◆	◆																								
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2021					◇	◇	◇	◇																				
Israeli Test Bed Experiments FY 2021					◇	◇	◇	◇																				
Arrow Weapon System Flight Test FY 2021					◇	◇	◇	◇																				
Israeli Test Bed Experiments FY 2022									◇	◇	◇	◇																
Arrow Weapon System Flight Test FY 2022									◇	◇	◇	◇																

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Missile Defense Agency		Date: May 2021
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Arrow Weapon System</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Israeli Test Bed Experiments FY 2020	1	2020	4	2020
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2020	1	2020	4	2020
Arrow Weapon System Flight Test FY 2020	1	2020	4	2020
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2021	1	2021	4	2021
Israeli Test Bed Experiments FY 2021	1	2021	4	2021
Arrow Weapon System Flight Test FY 2021	1	2021	4	2021
Israeli Test Bed Experiments FY 2022	1	2022	4	2022
Arrow Weapon System Flight Test FY 2022	1	2022	4	2022

Note

Based on the OUSD(C) FY 2022 President's Budget Submission Guidance, fiscal years covered in the justification material will include FY 2020 through FY 2022. Planned entries in the R4 may continue past FY 2022, out-years will be addressed in future budget submissions.

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency										Date: May 2021		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs				Project (Number/Name) MD34 / Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
MD34: Short Range Ballistic Missile Defense (SRBMD) (David's Sling Weapon System (DSWS))	1,183.746	141.000	127.000	127.000	-	127.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Note

This project encompasses the Missile Defense Agency's (MDA) U.S.-Israeli cooperative program for the Israeli David's Sling Weapon System Program.

A. Mission Description and Budget Item Justification

Israeli SRBMD, also known as the DSWS, is designed to counter short range rockets, cruise missiles, and tactical ballistic missiles and is integrated into the Israeli Missile Defense Architecture. The DSWS includes the Stunner Interceptor for Block 2 and a modified Stunner for Block 3 Capabilities, Missile Firing Unit (MFU), Multi-Mission Radar (MMR), Launch Site Controller (LSC), Data Link (DL), Elevated Sensor (ES), and the Golden Almond Battle Management Center (BMC).

The United States (U.S.) and State of Israel entered into a Memorandum of Understanding (MOU) on September 2016, in which "Such funding, should over a ten year period beginning in FY 2019 and ending in FY 2028, be provided at a level of \$500 million per year." (U.S. contributions only). These funds will be distributed between the Israeli Programs in Research Development Test & Evaluation (RDT&E) and Procurement Funds.

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

	FY 2020	FY 2021	FY 2022
Title: SRBMD Program	141.000	127.000	127.000
Articles:	-	-	-
<p>Description: The scope of the DSWS covers system development, testing, and integration of spiral software development for Blocks 2-3. Block 2 will add capability to defend against medium range and cruise missiles. Block 3 will provide robust defense capability and add significant detection capability to the Israeli Air Defense Architecture.</p> <p>Recurring Planned Accomplishments include:</p> <ul style="list-style-type: none"> - Conduct Testing of the DSWS - Continue Blocks 2 and 3 Spiral Development of the DSWS - Establish and Continue Interoperability with Israeli Air Missile Defense Network <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2021 Plans:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency		Date: May 2021
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022
-Continue DSWS Block 2 Development -Continue Block 3.1 enhanced DSWS capability development -Conduct System Flight Tests <i>FY 2022 Plans:</i> -Continue Block 2/3.1 enhanced DSWS capability development -Begin Block 3 Stunner Initial Lot Production (ILP) Long Lead Items -Testing of the Elevated Sensor -Procurement of U.S. Targets for Future DSWS System Tests <i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> N/A			
Accomplishments/Planned Programs Subtotals	141.000	127.000	127.000

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

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 06028866C: MD34: <i>Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS)) Procurement</i>	50.000	50.000	30.000	-	30.000	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

The MDA- U.S. Israeli Cooperative Program Office jointly manages the DSWS Program with IMDO to ensure that all systems are delivered with quality, on time, on budget, and meet the needs of the warfighter. The program funding is equitably funded between the U.S. and Israel with Israel providing matching contributions. However, a portion of the Israeli cost share comes from non-financial contributions such as previously completed work prior to joint program initiation. Contracts are awarded by IMDO or MDA, dependent on what is most advantageous to the Joint Governments. In regard to DSWS, IMDO contracts on behalf of U.S. government with Rafael. Rafael subcontracts with Israeli and U.S. companies.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Missile Defense Agency											Date: May 2021				
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs					Project (Number/Name) MD34 / Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))				

Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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
SRBMD Program - SRBMD Program	C/CPFF	Rafael : Israel	1,183.746	141.000	Dec 2019	127.000	Dec 2020	127.000	Dec 2021	-		127.000	Continuing	Continuing	Continuing
Subtotal			1,183.746	141.000		127.000		127.000		-		127.000	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,183.746	141.000	127.000	127.000	-	127.000	Continuing	Continuing	N/A

Remarks
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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 2022 Missile Defense Agency **Date:** May 2021

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))</i>
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆														
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 12.5%;">FY 2020</th> <th style="width: 12.5%;">FY 2021</th> <th style="width: 12.5%;">FY 2022</th> <th style="width: 12.5%;">FY 2023</th> <th style="width: 12.5%;">FY 2024</th> <th style="width: 12.5%;">FY 2025</th> <th style="width: 12.5%;">FY 2026</th> </tr> </thead> <tbody> <tr> <td></td> <td>◇ ◇ ◇ ◇</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026		◇ ◇ ◇ ◇					
FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026												
	◇ ◇ ◇ ◇																	
System Flight Test #7 FY 2021																		

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Missile Defense Agency		Date: May 2021
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System Flight Test #7 FY 2021	1	2021	4	2021

Note

Based on the OUSD(C) FY 2022 President's Budget Submission Guidance, fiscal years covered in the justification material will include FY 2020 through FY 2022. Planned entries in the R4 may continue past FY 2022, out-years will be addressed in future budget submissions.